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ATIKOKAN

LAND USE PLAN



BACKGROUND INFORMATION

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MINISTRY OF NATURAL RESOURCES

Atikokan District Land Use Plan

BACKGROUND INFORMATION

Ontario
Ministry of Natural Resources
Hon. Alan W. Pope
Minister
W. T. Foster
Deputy Minister

Revised February 1983


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FOREWORD

The Ministry of Natural Resources is responsible for providing opportunities for outdoor recreation and resource development for the continuous social and economic benefits of the people of Ontario and to administer, protect and conserve public land and water. In order to achieve this provincial mandate, the Ministry's broad program objectives which include Land Management, Outdoor Recreation and Resource Production require large tracts of land. Due to the diversity of objectives and the large land areas required to meet these objectives, the potential for land use conflicts is high. As a result, the Ministry of Natural Resources has embarked on a comprehensive land use planning process intended to co-ordinate the various Ministry programs, concerning the use of land, so that conflicts are minimized and all program objectives are addressed. The Land Use Planning process has a hierarchy of planning levels which include the Province, three planning regions, and the forty-seven administrative districts.

The main purpose of the provincial plan is to provide policy direction to the planning regions, while the Strategic Land Use Plan for Northwestern Ontario (SLUP), provides both policy direction and some area designation to the administrative districts. At the district level of planning, policy is to be translated into a land use plan.

In August of 1980 a draft of the Strategic Land Use Plan for Northwestern Ontario was released for public review. As a result, the administrative districts have initiated the third and final level of land use planning, the preparation of District Land Use Plans.

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A:introduction

The District Land Use Plan was developed in three phases over two years.

Phase I - Background Information, Approach to Policy & Problems and Issues Report (Winter 1982)

Phase II - Proposed Policy and Optional Plans Report (Spring 1982)

Phase III - District Land Use Plan (Summer 1982)

The production of the first phase of the District plan involves the collection of detailed information concerning the present use, capability and potential of the land and water resources of the District. As well this report will address the Ministry's approach to its resource policies and will list identified problems and issues which concern the Ministry in the formulation of the District plan. Ultimately, this report will form the foundation against which the district targets will be tested, optional plans developed (Phase II) and finally from which the District Land Use Plan will evolve (Phase III).

The intent of the District planning program is to produce a plan which co-ordinates the various land and water using programs of the Ministry so that conflicts are minimized and all program objectives are addressed. A regional and provincial perspective will be recognized throughout, but primarily consideration will be given to the local residents and traditional users of the planning area. The allocation of land and water resources will attempt to ensure that development and use are compatible with the maintenance of a high quality natural environment, as well as being consistent with the expectations of local people.

Readers Caution: Quetico Provincial Park is evaluated with regard to its resource potential but because of its status as a wilderness park no other land use options will be considered for this area in the plan. A Master Plan, approved in 1977, provides management guidelines for Quetico.

B:terms of reference

The Ministry of Natural Resources is the government's official custodian and manager of Crown land. The purpose of this report is to produce a plan that will co-ordinate the various land use programs of the Ministry so that conflicts are minimized and all program objectives are met. The plan is to be a comprehensive document, indicating how the Ministry plans to use Crown land and influence the use of private land in order to achieve its' objectives over a period of 20 years. For Crown land, the Ministry will identify the land and water requirements for its own programs and for all other government programs as well.

For private land, the Ministry plans will identify the land required for Ministry of Natural Resources programs. This will necessitate liaison and consultation with agencies, such as local municipalities, which have control over private lands as well as individual landowners.

Public participation is an integral part of the planning process. It gives people the opportunity to be involved by reviewing the plan and allowing them to become aware of its possible effects on their lives so that they can comment accordingly. Their input may result in changes to plan alternatives. Primary consideration will be given to the local residents and traditional users of the planning area. As the reports of each phase of the planning program are completed, they will be distributed to the public for comment.

C:plan implementation

Once the Atikokan District Land Use Plan has been approved by the Ministry of Natural Resources, it will be implemented by:

- designating Crown lands under the Public Lands Act (Section 12);
- monitoring the activities of other government agencies with the implementation largely carried out through the regular programs of the Ministry and
- the private sector to ensure that the intent of the Ministry's legislative mandates, policies, programs and the District plan are adhered to.

D:plan review

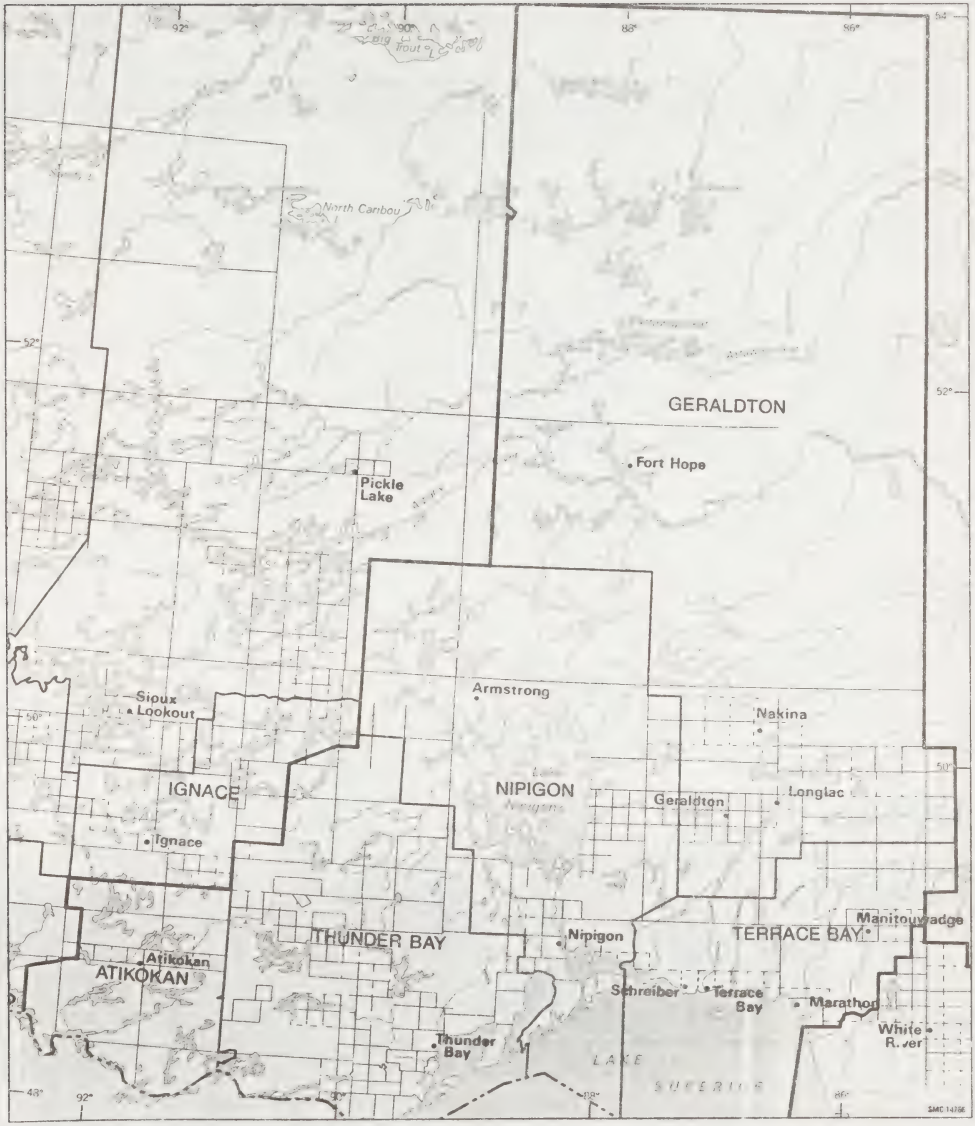
The plan will state the Ministry's programs for the plan period of approximately twenty years. These programs, in many instances, will be indicated very broadly. Detailed planning on specific sites will still be required and will be carried out by the various Divisions concerned. New information, a shift in policy or any other substantial change may make it necessary to review and update the plan. Since planning is a dynamic process, the need for a review cannot be expected to occur at planned intervals. The Atikokan District Plan, therefore, will be open to periodic review. Certain other decisions such as those from the political arena and those affected by international economic factors may cause early review and modification of the plan. Since the plan will reflect approved Ministry policy, proposed changes will be made through a formal amendment process.

A:regional context

Atikokan District is one of five Ministry of Natural Resources administrative districts in the North Central Region. The Region is situated south of Hudson Bay and north of Lake Superior and includes portions of the Arctic and Great Lakes Watersheds. Population in the Region is generally sparse and widely scattered throughout the area with one major concentration in Thunder Bay. The Region is rich in natural resources with forest, mining and tourist industries dominating the resource related sector of the economy. (Figure 1)

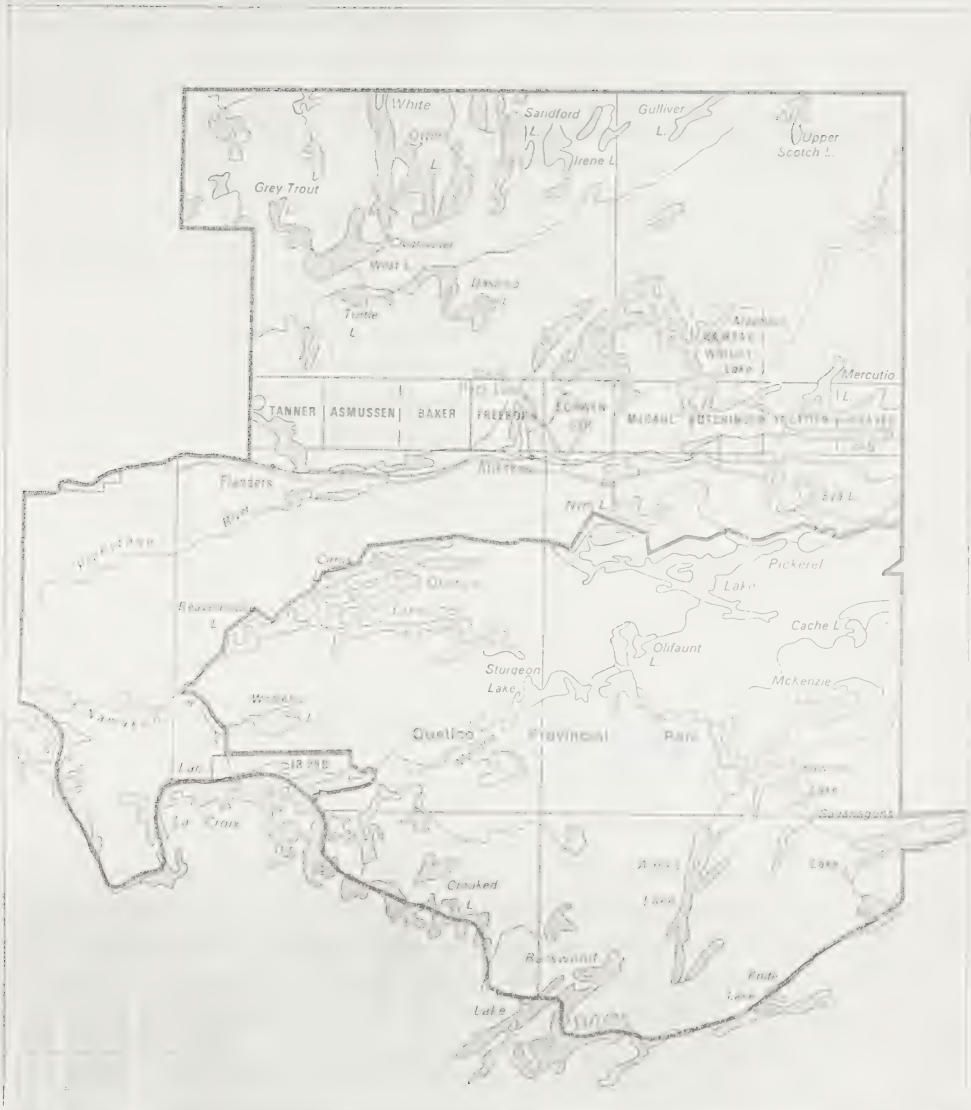
B:planning area

The focus of this plan is the Atikokan Administrative District which lies within the North Central Administrative Region as shown on Figure 2. It encompasses an area of 11,321 square kilometres, and contains 12 townships, 1 Indian Reserve, the town of Atikokan and Quetico Provincial Park, the second largest wilderness park in Ontario. Total population for the planning area is 5,000 +/-.


Big Trout Lake
North Caribou L.
GERALDTON
Fort Hope
Pickle Lake
Armstrong
Sioux Lookout
Nakina
IGNACE
NIPIGON
Geraldton
Longlac
Ignace
Manitouwadge
THUNDER BAY
Nipigon
TERRACE BAY
Atikokan
ATIKOKAN
Schreiber
Terrace Bay
Marathon
Thunder Bay
White River
LAKE SUPERIOR
92°
90°
88°
86°
54°
52°
50°
48°
SMC 14756
50 0 50 100 150 km

Atikokan Administrative District
North Central Region

Figure 2



C:climate

The province of Ontario is primarily influenced by the continental polar air mass from the north. However, the proximity of Atikokan to the western prairies results in a warmer, drier climate due to the influence of the continental dry air mass from the Rockies. This mass decreases humidity while increasing evaporation and transpiration, resulting in a "western" influence on the local flora and fauna. The mean annual temperature for the District is 1.1° C. The mean daily July temperature is 17.5°C and the mean daily January temperature is -19.6°C. The average frost free period is 72 days. The latest recorded spring frost was June 16 and the first recorded fall frost was on August 28. Average annual precipitation is 71 centimetres. The prevailing winds in the spring and summer are predominantly from the southwest and, in the winter, they are from the northwest.

D:bedrock geology

All of the Atikokan District is underlain by rocks of Early Precambrian age which commonly give radiometric ages of 2.5 to 2.9 billion years. The oldest units are east to northeast trending belts of metavolcanic and metasedimentary rocks with the east striking Quetico Fault separating the metavolcanic rocks on the north from the metasedimentary rocks to the south. These units are commonly referred to as "greenstone" belts. The metavolcanic rocks are generally mafic in composition with rocks of intermediate to felsic composition occurring locally. Where the latter are of sufficient aerial extent they are

LEGEND

- Granitic Intrusive Rocks and Migmatic Complexes
- Metasedimentary Rocks
- Intermediate to Felsic Metavolcanic Rocks
- Intermediate to Mafic Metavolcanic Rocks



Source: M.N.R., 1980

indicated on the bedrock geology map as a separate unit; this is done because of the importance of felsic volcanic rocks in mineral exploration. Ore grade ironstone was associated with the volcanic rocks in the area of Steep Rock Lake; it was this iron stone which gave rise to the iron mines of the area. Sulphide bearing ironstone is present near the Quetico Fault zone; the ore product from the Atikokan Iron Mine came from this unit.

The metasedimentary rocks are commonly comprised of sandstone, mudstone and related rock types and as the distance from the Quetico Fault increases the degree of metamorphism increases and the rocks grade into biotite schist, biotite gneiss and associated migmatitic rocks. These "greenstone" units are generally considered to have formed in a submarine environment. Small intrusions of ultramafic rock occur within the metasedimentary rocks. Because of their size they cannot be shown on the bedrock geology map but they are mentioned here because of their potential for precious metals.

The rest of the District is underlain by granitic rocks which occur as massive to weakly foliated batholiths formed from the cooling of magma at depth, or as layered migmatitic rocks derived from the partial melting of pre-existing sedimentary or volcanic rocks. Subsequent erosion has exposed them to the earth's present surface. During this period of granitoid emplacement the volcanic and sedimentary rocks were folded to form linear mountain belts, the cores of which remain today as "greenstone" belts.

A small alkalitic intrusion comprising of malignite occurs in the Poohbah Lake area in Quetico Park. Diabuse dikes are found throughout the area but too small to be shown on the map. (Figure 3)

E:surficial geology

The surficial deposits of the District were formed primarily during the

Pleistocene. All of these Pleistocene deposits were formed during the Wisconsin glaciation. Individual glacier lobes advanced and retreated in a quite complex fashion producing a landscape typical of a glaciated Precambrian shield area.

The Atikokan District may be separated into two areas by the Eagle Finlayson moraine trending northwest southeast across the District. This feature has been modified extensively by lake action and generally exhibits a central boulder core flanked with stratified sands and gravels. South and southwest of this feature a mantle of ground moraine, essentially, a silty sand till, predominates. Till is a nonstratified, not obviously sorted, sediment deposited directly by glacier ice. The depth of this deposit is quite variable and in some areas thins to a point where bedrock becomes the dominant feature. Glaciofluvial outwash, that is, sands and gravels deposited in fluvial environments beyond the glacier, may be observed in and to the north of Asmussen Township. These deposits characteristically are well-sorted and stratified. Fine to medium-grained glaciolacustrine sands occur north and northwest respectively of Mack Lake and Calm Lake. Also, varved clay and silt has been observed north of Ferguson Lake. These sediments generally reflect deposition in relatively low energy, deep water lake environments.

North and northeast of the Eagle Finlayson moraine the dominant surficial deposit is a very fine-grained, windblown, blanket deposit known as loess. This deposit is comprised predominantly of silt and very fine sand, and, possibly, was derived from nearby outwash plains. Glaciofluvial and glaciolacustrine deposits, similar to those described earlier, also occur. (Figure 4)

F: topography and soils

The topography of the District was shaped and modified by 2500 million

Surficial Geology

Figure 4

LEGEND

- Aeolian Deposits
- Glaciolacustrine Deposits
- Glaciofluvial
- Moraine Deposits
- Bedrock



Source: M.N.R., 1980

years of erosion and several glacial periods. The Pleistocence Glaciers removed soil and rock, gouged numerous depressions in the bedrock and blocked and disrupted the existing drainage pattern. When the glaciers finally retreated about 10,000 years ago, the District topography consisted of rolling hills, rugged bedrock outcroppings, gravel ridges and countless gullies. Water from the melting glaciers filled the ice-gouged depressions creating a myriad of long linear north-east and south-west oriented lakes.

The elevation of the District varies between 350 metres above sea level in the Trout-Lilac lake area near the south-west boundary of the District to 486 metres around Old Man and Upper Scotch lakes near the north-east boundary of the District. The mean elevation is approximately 426 metres above sea level.

According to Canada Land Inventory (C.L.I.) land classification map, the District is divided into two macrorelief categories, weakly broken plains and moderately broken uplands of unconsolidated inorganic material of varying depths. The most prominent topographic feature is the Eagle-Finlayson end moraine (Steep Rock Moraine) a sand ridge 240 kilometres long which extends north of Clearwater West Lake in a south-east direction into Quetico Park. The moraine is a narrow ridge attaining heights of 30 metres above the surrounding area. (Figure 5)

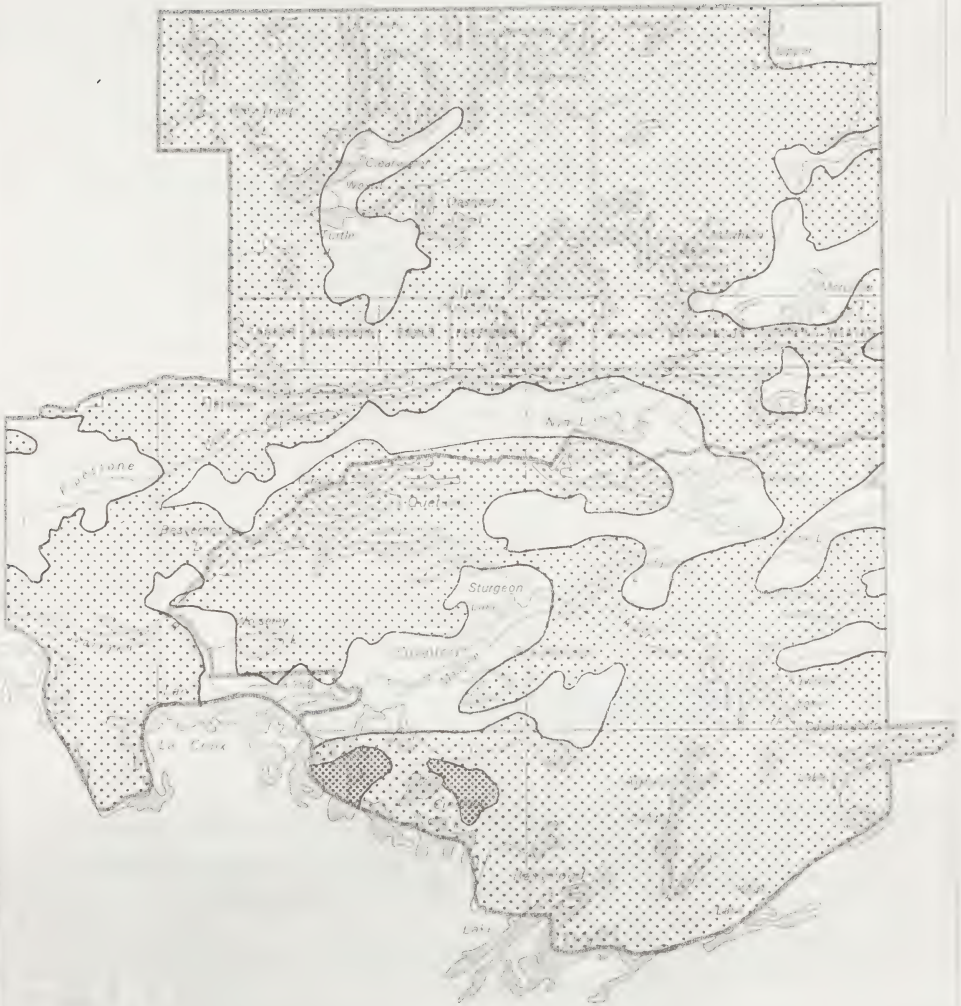
The most wide-spread soil substrate in the District is composed of sand mixed with gravel, stones and boulders. It forms a discontinuous layer usally less than 1 metre deep. This material can be divided into two broad categories depending upon the type of bedrock from which it was derived. Ground moraine derived from granite is quite acidic and is extremely low in nutrients; consequently, the quality and diversity of the ecosystem it supports is low. Ground moraine derived from metasediments and greenstone bedrock is moderately acidic and rich in nutrients readily usable by vegetation. Thus, these areas support a more diverse ecosystem. Because glacial till was only moved short distances by the glaciers, the two types of ground moraine will be found directly on top of or a short distance south-west of the respective bedrock source.

The northeastern section of the District is characterized by a thin layer (less than 0.6 metre) of stone-free sand and silt called loess,

Topography

LEGEND

- Strongly Broken Uplands
- Moderately Broken Uplands
- Weakly Broken Plains



Source: O.L.I., 1976

which was originally deposited by wind action.

Lacustrine deposits of sand are found along the course of the Seine River from Banning and Perch Lake through to the Atikokan townsite. These deposits are more pronounced where the Seine River meanders northward from Melema Lake to the south shores of Richardson and Old Man Lakes. Small pockets of varved clays between 0.61 to 9 metres deep are found in some valleys and low rock knobs. These deposits are very rich in calcium and other nutrients and are capable of supporting plant species typical of southern Ontario. Outwash deposits consisting of fine sand and gravel are located in the north-western part of the District in the vicinity of Clearwater West, Turtle and Williamson Lake. A second area is found on the north shore of Eva Lake. (Figure 6)

The Steep Rock Moraine extends 240 kilometres south-eastward through the District across the east end of Pickerel Lake. This end or terminal moraine, deposited at an ice halt position as the last ice sheet receded, is composed of sand, gravel, stones and boulders. This moraine is an excellent source of aggregate material.

The south-west extremity of the District consists of extensive stretches of bare bedrock. Overburden was removed by wave action from preglacial Lake Agassiz. (Figure 7)

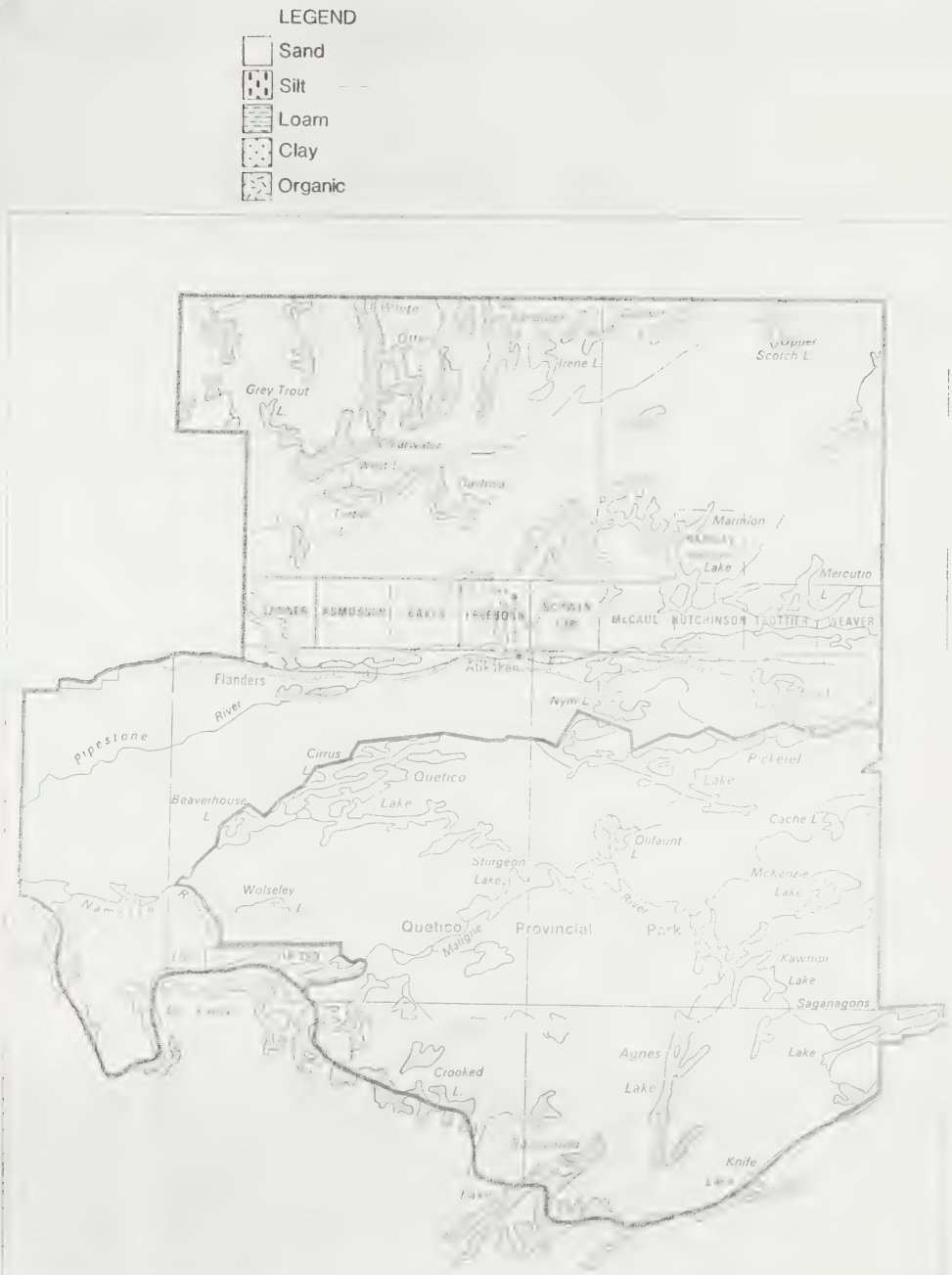
G:water resources

The lakes and streams of the Atikokan District all lie within the Lake Winnipeg drainage basin. These water bodies flow in a westerly direction draining into Rainy Lake, Lake of the Woods and Lake Winnipeg.

The tertiary watershed divisions found within the District conform with the key lakes and river systems. Figure 8 shows the tertiary divisions and Table 1 their characteristics.

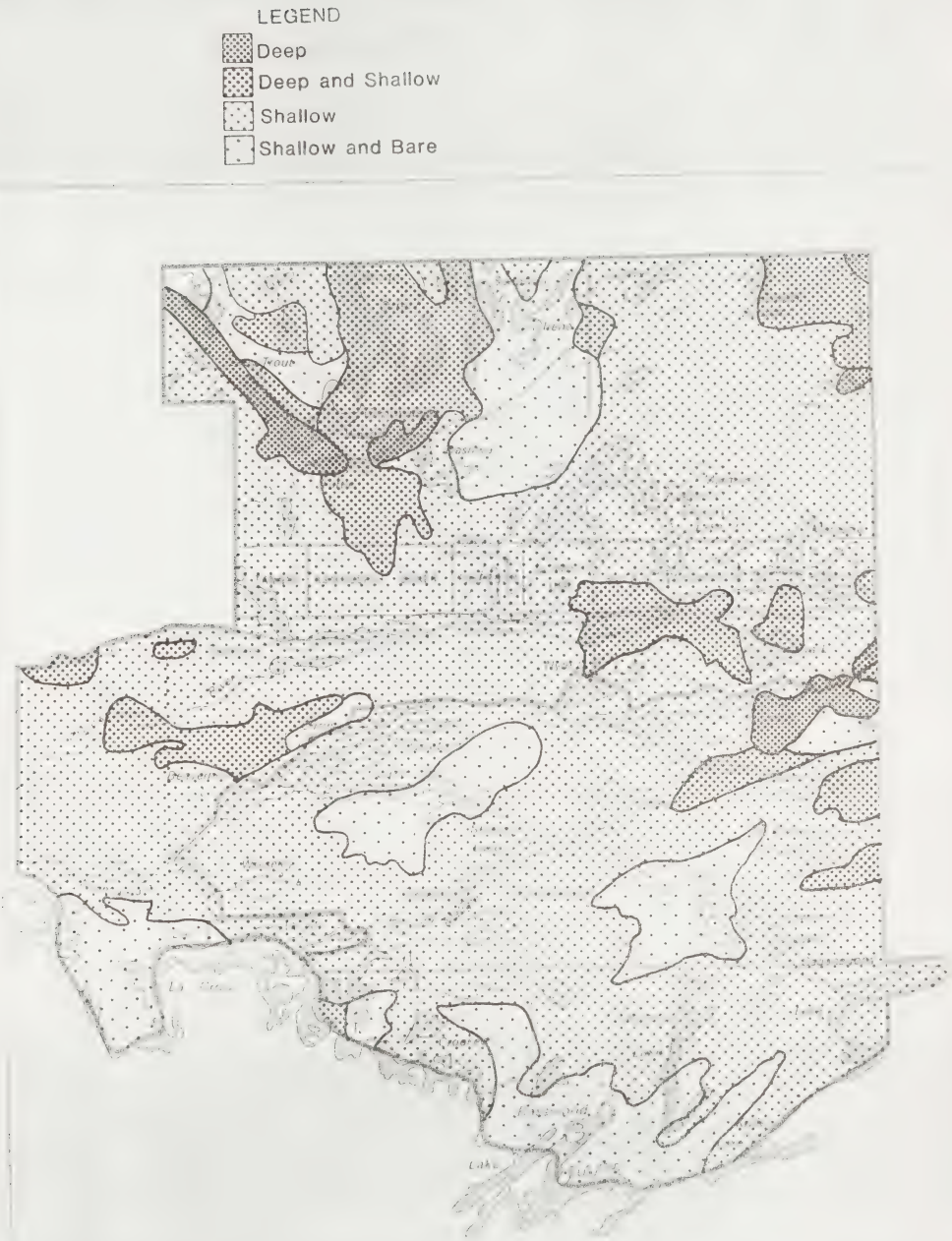
Soil Texture

Figure 6



Source: O.L.I., 1976

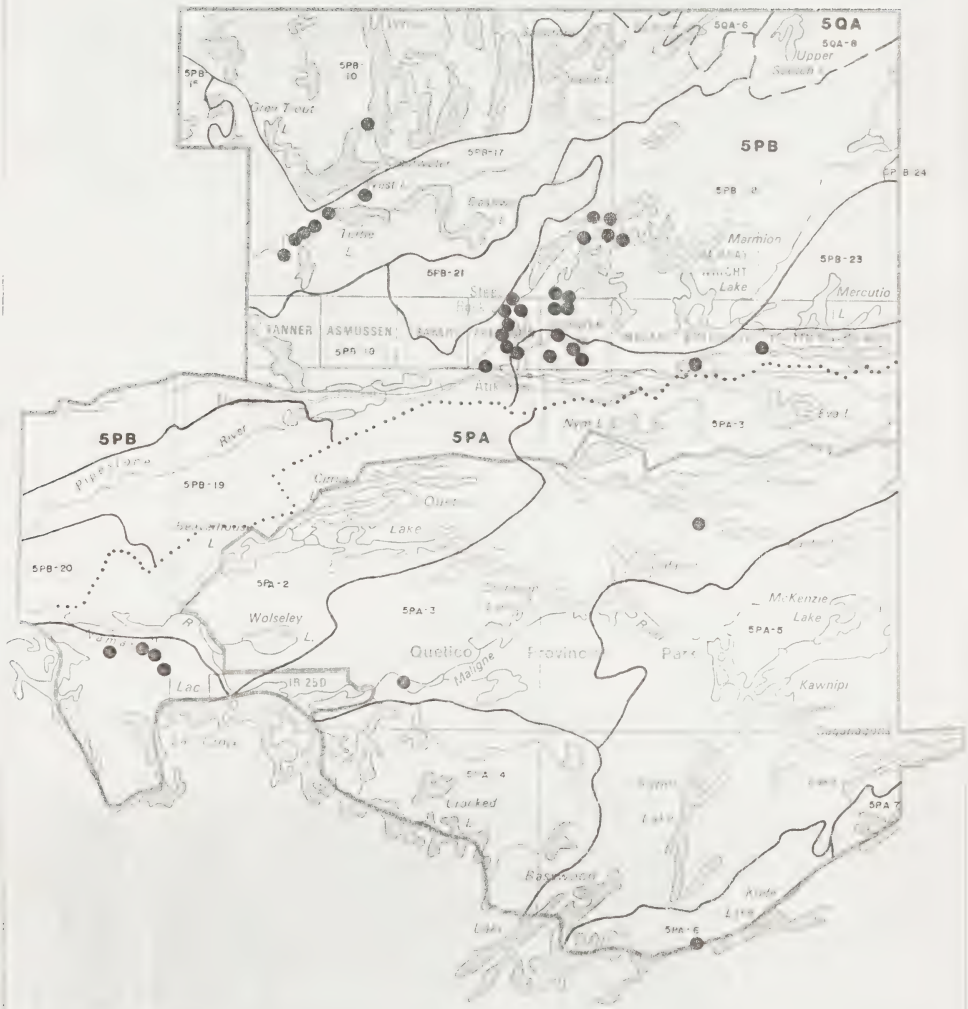
Soil Depth



Source: O.L.I., 1976

LEGEND

- Secondary Watershed Division
- Tertiary Watershed Division
- Watershed Units
- Water Control Dam



Source: M.N.R., 1980

Of the total District area of 1,132,100 hectares, approximately 244,601 hectares (20%) is comprised of water. There are 7,026 lakes, ranging in size from 1 hectare to 10,524 hectares.

The Seine and Atikokan Rivers are classified as old age river systems. These Rivers have the lowest base level due to erosion, low gradients with many meanders and narrow and defined water channels. The rivers' peak water flow is normally in late April and early May.

The water quality within the District is generally clean. Over the years, a sampling program has been carried out to determine mercury levels in some of the more heavily fished lakes. Figure 9 shows the lakes from which fish samples were taken and tested. It should be noted there are no direct industrial sources of mercury pollution in the District. Test results are on file in the Atikokan District office.

Figure 9



Source: M.N.R., 1980

TABLE 1 COUNTS AND MEASURES OF WATERSHED UNITS IN THE ATIKOKAN DISTRICT

CODE	WATERSHED NAME	AREA OF WATERSHED (ha)	LAKE AREA (ha)	NUMBER OF LAKES
5PA-1	Redhorse River	28,836	4,806	69
5PA-2	Lower Namakan River	106,920	28,563	576
5PA-3	Lower Maligne River Wildgoose Creek	205,173	48,974	1,260
5PA-4	Upper Namakan Lower Basswood Rivers Darky Creek	65,043	15,927	456
5PA-5	Middle Maligne Middle Basswood Rivers	202,449	30,439	1,338
5PA-6	Upper Basswood River	17,091	3,607	201
5PB-10	Turtle River	117,146	24,727	615
5PB-17	Little Turtle River	114,615	15,814	625
5PB-18	Lower Seine River - South East Rainy River	228,541	50,231	872
5PB-19	Pipestone River	42,525	3,872	196
5PB-21	Eye River	24,705	4,196	137
5PB-22	Atikokan River	38,678	5,388	314
5PB-23	Mercutio River	24,300	3,920	182
5QA-6	Gulliver River	13,122	2,027	81
5QA-8	Upper English Scotch River	22,154	2,110	104
TOTAL		1,251,298	244,601	7,026

Source *Derived from Counts and Measurements of Ontario Lakes by Watershed Units*

H: vegetation

The Atikokan District is located in a transitional zone between the Boreal and the Great Lakes - St. Lawrence forest regions.

Species characteristic of both regions can be found within the District. The inclusion of limited more southerly species from the Great Lakes - St. Lawrence region such as white pine, red pine, red and bur oak, ash, yellow birch, sugar maple, basswood and elm separates the Atikokan area from the majority of Northern Ontario in which the more northerly boreal species predominate.

This added diversity increases the scenic attraction of the area when compared with the more typical stands of black and white spruce, jack pine, aspen, and white birch characteristic of the rest of the north.

Many of these southern species, especially hardwoods, are growing at the northern extent of their range and are not usually merchantable because of their smaller height and diameter. (Figure 10)

I: prehistory

The prehistory of North Central Ontario spans nearly 9,000 years, from about 7,000 BC to the 17th century AD. Archaeologists working in the area over the past 20 years have recorded over 1,000 sites used by the original inhabitants of Northern Ontario. Through their stone tools, broken pottery sherds, food remains, and other discarded items, the long forgotten ways of life of these prehistoric peoples are slowly and

painstakingly being reconstructed.

1. PALAEO-INDIAN PERIOD

a. Postglacial Caribou Hunters

Ten thousand years ago, the landscape of North Central Ontario was far different from today. The Wisconsin glacier still covered the northern part of the province as far south as Lake Nipigon, and a large glacial lake, Minong, filled the Lake Superior basin. A second glacial lake, Lake Agassiz, innundated a large area from Atikokan west into Manitoba. Along the ice margins were expanses of open park land and tundra-like vegetation. Caribou and other species now found only in the far north ranged across the region.

Late Palaeo-Indian people of the Plano culture appear to have entered the Thunder Bay area from the south and west about 7,000 BC. (Unfortunately, little is yet known of these early people.) Their campsites were located on the ancient shorelines of the glacial lakes, now many kilometres inland from the present shore. Their tool kit includes distinctive lanceolate points and large stone knives. Spear points made by these people have been found in Quetico. It would appear that the Plano people were primarily hunters of large game, probably caribou, which they intercepted at crossing places on the shores of Lake Minong. Fish, fowl, edible plants and berries probably supplemented their diet.

With the recession of the continental glacier came lowering lake levels, and the northward migration of the plant and animal communities upon which the Palaeo-Indians depended for their existence. This resulted in the decline of the caribou-hunting life style in the Lake Superior region, about 5,000 BC.

---

2. ARCHAIC PERIOD

a. Diversification of Subsistence Technology

Warmer, drier climatic conditions and changes in the distribution of large game and plant communities beginning about 5,000 BC stimulated a shift in subsistence orientation to exploitation of small game and plant resources. Corresponding changes in the artifact assemblage included a reduction in the size of projectile points and the appearance of a fishing technology, which included the use of fish hooks, harpoons, net

sinkers and gaffs.

Two Archaic cultures have been recognized in Northern Ontario. The people of the Shield Archaic culture appear to be descended from the Plano people, and were indigenous to the boreal forest zone, north of Lake Superior.

To the west, in the Lake of the Woods - Quetico area, there is evidence of a different culture more closely related to the Archaic cultures of the Plains. These Plains Archaic peoples appear to have entered the area in conjunction with an eastward movement of prairie-grasslands out of Manitoba and Minnesota. Perhaps the most important development of the Archaic in the Lake Superior region was the appearance of a new industry: the production of tools from native copper found on the shores of Lake Superior. Although this reprents some of the earliest metal-working in the world, the Archaic people of Lake Superior were not the earliest metallurgists in the true sense of the word. Their tools were manufactured by heating and hammering the copper into shape, not be casting as was done in other parts of the world. There is evidence that copper tools were being traded widely across eastern North America at this early period.

---

3. INITIAL WOODLAND PERIOD

a. Traders and Potters

Ceramics first appeared in the North Central region of Ontario about 500 BC. The earliest vessels were small pottery jars manufactured by the coil method. They had conical bases and distinctive impressed decoration executed with a toothed or sinouous-edged implement. These conical-based vessels, as well as the large burial mounds located along the Namakan River are identifying characteristics of the Laurel culture. The Laurel people practised a way of life similar to that of the Archaic people in the region: fishing, hunting, and collecting wild plants on the major waterways north of Superior. The bow and arrow is thought to have originated during this time.

There are two major theories concerning the origin of the Laurel culture in the area. One is that Laurel arose out of an Archaic base, and differed from it only in that pottery had been adopted. The other suggests that Laurel people moved into the area from the south and east,

following the expansion of wild rice into the Upper Great Lakes area about 500 BC.

By the Initial Woodland period, extensive exchange networks had been established which stretched from the eastern seaboard to the Rocky mountains. The Laurel people appear to have participated actively in this network. Artifacts made from Lake Superior copper have been found on sites throughout eastern North America, while such exotic items as marine shell beads from the Atlantic coast, stone tools of Knife River chalcedony from North Dakota, and obsidian from Yellowstone Park, Wyoming, have been found on Laurel sites in the Lake Superior region. Long distance trade was facilitiated by the extensive system of waterways linking Lake Superior with the east, west, north and south - the same transportation network which would be utilized by the fur traders over a thousand years later.

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4. TERMINAL WOODLAND PERIOD

a. Late Prehistoric Cultures in the Lake Superior Region

Two indigenous cultures, both of which appear to have developed from a Laurel culture base and carried on similar ways of life, were present in the Terminal Woodland period. In the vicinity of Lake Superior are sites of the Blackduck culture. The Blackduck culture is characterized by globular pottery vessels, texturized with a cordwrapped paddle. To the north is the Selkirk culture, distinguished archaeologically by its fabric-impressed globular vessels.

The Selkirk culture is believed to be that of the prehistoric Cree. There is, however, considerable controversy over the ethnic identity of the Blackduck culture: some researchers believe Blackduck is prehistoric Assiniboine, due to the strong similarities in material culture with historic Siouan groups to the south: others have suggested that Algonkian-speaking people, historically identified as the Ojibway, produced the Blackduck culture; still others are of the opinion that, given our present state of knowledge, no direct correlation can be drawn between archaeological cultures and historically-identified linguistic groups. These people were probably the originators of the Indian Rock painting. The Atikokan District has a high concentration of pictographs, mostly within Quetico. A large majority of the pictographs are found on rock cliffs overlooking water and almost all of the

paintings are done in red ochre. Little is understood about the meaning of these paintings and structures but it is believed that many date to the Woodland period and that they are of religious significance.

Iroquoian pottery from Southern Ontario and Plains and Michigan derived ceramics are occasionally found on late prehistoric sites in the North Central area. Whether these represent objects of trade, or the presence of small groups of non-local people in the area, has yet to be determined.

On sites dating to the latter part of the 17th century, glass beads, scraps of metal, thimbles, and other articles provide evidence of culture - that of the European fur traders. The influx of European trade goods in the late 1600's signals the beginning of the adoption of, and adaption to, Western culture by the native peoples of the North-Central Ontario.

Throughout the late 17th and 18th centuries, the native people were drawn into the European fur trade. Two significant water routes enroute to the west pass through the Atikokan District and became well known to fur traders and explorers.

By 1850, the fur harvest underwent a considerable decline due to the sustained heavy harvests and the loss of furbearers' habitat due to land clearing.

J:fur trade

Following the explorations of de Noyon in 1688, de la Noue in 1717, and La Verendrye in 1731, the fur trade began in earnest with the setting up of trading posts on Lake of the Woods and Rainy Lake. The French trade was based on their headquarters at Grand Portage and utilized the border route in their travels to the west (Pigeon River, Fowl Lakes, Moose

Lake, Mountain Lake, Rose Lake, North and South Lake, Gunflint, Saganaga, Knife Lake, Basswood, Lac la Croix to Rainy Lake) with very little traffice on the northern route taken by de Noyon.

Following 1759 when the French fur trade disappeared after the fall of Quebec, independent traders from Montreal moved in to take over the trade. In order to compete with the Hudson's Bay Co., the independents combined in 1779 to form the North West Co., and made Grand Portage their headquarters on Lake Superior. Using the border route to the west, they continued to compete with the Hudson's Bay Co. for the fur of the country.

In 1798 Roderick McKenzie rediscovered the route de Noyon travelled 110 years earlier. The North West Co. established a new headquarters at Fort William at the mouth of the Kaministiquia River in 1801. The annual fur brigades now began to travel through the heart of what we now call the Atikokan-Quetico area, following the route originally pioneered by de Noyon, and this continued to be the main route to the west until the coming of the railroads.

The catch of fur in the country beyond the height of land declined as the area became trapped out almost to the point of extinction of some species of furbearers and the North West Co. expanded its operations farther west as far as Athabaska, forcing the Hudson's Bay Co. to establish posts in the interior in order to compete. The North West Co. continued to operate until 1821 when it was amalgamated with the Hudson's Bay Co.. Following the union, the operations of the Hudson's Bay Co. continued by way of Hudson Bay. The traffic from the fur trade had disappeared completely by the 1850's except for local trade to small posts operated by Hudson's Bay Co. at Savanne, Pine Portage on Pine Lake in Quetico Park, and McLaurin's Post, operated by the independent trader on an island in Sturgeon Lake. Even as the traffic of the fur trade declined on the route, a new and more urgent need was developing for a route to the west.

With the completion of the Canadian Pacific Railroad between Winnipeg and Thunder in 1882, the Atikokan area entered a new area. Reports of mineral finds were beginning to be heard and demand for wood increased.

In 1899, Atikokan became a community with its designation as a

divisional point for the Canadian Northern Railway.

The municipality of Atikokan was incorporated into a Township, January 1, 1953.

K:resource development

In 1937, iron ore was discovered at the bottom of Steep Rock Lake and, with the threat of war in 1942, the task of pumping out Steep Rock Lake began in earnest. The first iron ore was sighted in 1944 and by 1979 the two established mines, Steep Rock Iron Mine and Caland Ore Company, were producing 2,520,000 tonnes of high grade ore a year. Today, both of these mines have ceased operations with a loss of employment for 1,000 people.

Logging and mineral exploration were closely linked in the early days with mines being the prime users of timber. The first recorded logging in the District took place in the latter part of the 19th century when railroad and agricultural development in the west created great demands for railroad ties and lumber.

The historical canoe routes of the voyageurs and fur traders in the south provided the means of driving the wood to the large sawmills established in the Fort Frances area. The Seine and Turtle River system provided similar access in the north. Any readily accessible sawlog timber, as well as red and white pine stands, were depleted. These stands were logged during the period 1918 to 1946, with the Shevlin-Clarke timber company being the most notable operator.

The J. A. Mathieu Company, operating since 1921, cut much of what is now the Sapawe unit. Wood was transported by river drive first to Fort Frances and later to Sapawe upon establishment of a stud mill there. Overland hauling commenced in 1953.

The Flanders area experienced a lengthy period of inactivity from the late 1940's until the completion of Highway 11 west to Fort Frances in 1965. Highway road access along with mill expansion in Fort Frances increased the demand for pulpwood species in the area.

The Shevlin-Clarke Lumber Company sold their licence area to the Ontario-Minnesota Pulp & Paper Company (now Boise Cascade of Canada Limited) in the late 1940's.

In 1965, Atikokan District was divided into two Crown Management Units and one company unit. Part of the Flanders Crown Management unit as well as a portion of the Boise Cascade Seine Concession, extend beyond the District boundary into Fort Frances District. The Sapawe Crown Management Unit is entirely within the Atikokan District.

Each unit is regulated by an approved Forest Management Plan. The management plan for the Flanders Unit expires on March 31, 1985. An interim plan for the Sapawe Unit, effective until March 31, 1985, has been submitted and is currently awaiting approval.

The Seine Concession is regulated under a company plan, submitted by the Ontario-Minnesota Pulp & Paper Co. in 1967, expiring on March 31, 1987.

L:population

From 1899 to 1940, the Distrtict's population of 600 was mainly because of the Canadian National Railroad. The town of Atikokan was a divisional point on the railway and the population center of the District. The following 10 years resulted in an iron ore boom and the population increased to 3,000.

A peak period of growth occurred between 1940 - 1960, with the

development of full scale operations at both Steep Rock and Caland Ore mines. By 1960, the population had doubled to 6,000 with minor fluctuations. The peak population of 6,275 occurred between the years 1966 to 1971. The late 1970's resulted in a steady decline in population with the closure of the iron mines, the town's main industrial base.

Today, the population of the Atikokan Administrative District is approximately 5,261 people. Based on the 1976 Canada Census, 94 percent of the people resided within the Township of Atikokan. The remainder, (34) live in Sapawe, Flanders (8) and on the Lac la Croix Indian Reserve (210). Of the 4,703 people living within the township, 53 percent of the residents are 30 years of age and under, 23 percent are in the 30 - 50 year age bracket, and 24 percent are in the 50 years and over category. (Table 2)

Several ethnic backgrounds are present in Atikokan. Those of British decent account for 50.5 percent of the total population. The remainder is comprised of European 31.9 percent, French Canadian 10.6 percent, native people 1.6 percent and an additional 5.4 percent for others.

The decline and eventual levelling off of the population base will likely have little or no effect on most Ministry programs.

TABLE 2 POPULATION DISTRIBUTION

Population Distribution in Atikokan District

Organized Townships	Population
Atikokan	4,703
Unorganized Territory	348 (1)
Indian Settlement	
Lac la Croix	210
Total	5,261

Population Distribution by Settlement

Settlement	Population	% of District Population
Atikokan	4,703 *(2)*	84.39
Sapawe	34	.65
Flanders	8 *(3)*	.15
Indian Reserve	210	3.99
Other	306	5.82
Total		100.00

Notes (1) Estimate based on number of permanent dwellings
(2) Municipality Census Report - 1980
930 Statistics Canada, 1976 Census

M:employment

A total of 1,464 people were employed full time in Atikokan during 1980 as compared to 1,984 in 1978. Today one third of the full time workers are employed in forestry and forest products where mining and mineral processng once employed half of the Atikokan full time workers. Other major employment groups include retail and related services (18%), education (7%) and government agencies (6%).

The following table provides an economic breakdown of the distribution of employment of Atikokan work force by industry. *(1)*

TABLE 3 EMPLOYMENT BY INDUSTRY - ATIKOKAN, 1980

Industry	Full Time	Part Time	Full-Time as Percentage
Mining and Mineral Processing	51	5	3.5
Forestry and Forest Products	464	24	31.7
Manufacturing	6	1	.4
Industrial Supplies	17	6	1.2
Construction	25	23	1.7
Transportation	49	14	3.4
Retail and Related Services	266	137	18.2
Tourist Industry *(3)*	117	147	8.0
Finance	40	4	2.7
Professional Services	73	68	5.0
Education	103	27	7.0
Government Agencies	88	317	6.0
Township Services	78	48	5.3
Ontario Hydro Related *(4)*	87	--	5.9
Total	1,464	821	100.0
Non-Local Hydro Related *(5)*	141	--	
Non-Local Construction *(6)*	91	3	

Notes (1) Source - Atikokan Development Needs - Brian W. Ross, Economic Development Commissioner, Township of Atikokan

(2) Based on survey of employees in and near Atikokan, an attempt has been made to exclude non-residents

(3) Includes hotels, motels and resorts in the District

(4) Includes persons with an established residence in Atikokan, employed at Hydro site.

(5) Includes persons either boarding in Atikokan, or living in the Hydro camp, employed at the Hydro site.

(6) Includes employees of non-local contractors engaged in road construction and related temporary projects.

N:land tenure

Ninety-eight percent (98%) of the land base in the Atikokan District is Crown owned. Forty-two percent of the Crown land is Quetico Park. Patented lands amount to 1.44% with 0.56% designated as Indian Reserve. (Figure 11)

O:transportation

1. HISTORY

Atikokan became a divisional point with the completion of the Canadian Northern Rail line in 1899.

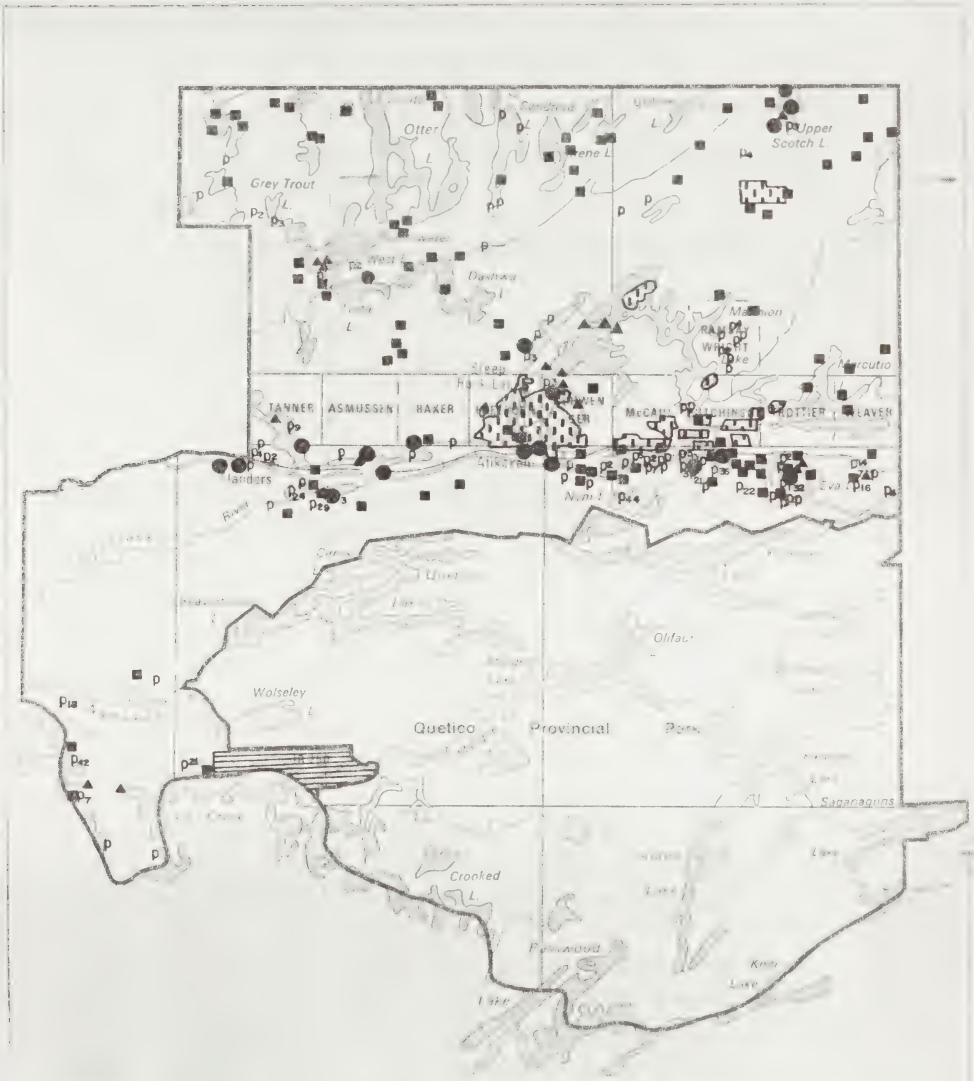
Roads within the community were few and poorly maintained and access to the town itself was by rail only.

The discovery of iron ore deposits followed by the establishment of the Steep Rock Iron Mine in 1939, contributed to the need for a road link both to the east and west. Atikokan was joined with Thunder Bay to the east with the completion of Highway 11 in August 1954. The distance covered was 208 kilometres. The further extension of Highway 11 west to Fort Frances, a distance of 144 kilometres, was not completed until June 1965.

A municipal airport complemented Atikokan transportation facilities when it was completed in October 1975. The 1,067 metre air strip readily accommodates aircraft up to and including D.C. 3's. (Figure 12)

LEGEND

- Crown Land
- Patent Land
- P7 Smaller Patent Land (Number indicates if more than one)
- Land Use Permit
- Lease
- Licence of Occupation
- Indian Reserve



Source: M.N.R., 1980

2. SECONDARY HIGHWAYS

The three secondary highways within the Atikokan District are paved and extend northerly from Highway 11.

Highway #633 extends 4.8 kilometres north to Kawene, a former C.N.R. maintenance depot.

Highway #623 extends 3.2 kilometres north to a Domtar sawmill yard. Highway #622 extends from the town of Atikokan 8.0 kilometres north to the Caland iron ore mine.

The junction of Highways 11 and 11B, which accesses Atikokan, is 3 kilometres from the town of Atikokan.

In 1978, a new highway, the Bending Lake Road, was started. With its completion in approximately 1990 there will be a link between Atikokan and Highway 17.

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3. FOREST ACCESS ROADS

M.N.R. roads are classified according to the North Central Region road standards. In general, Class A roads are main haul roads built for continuous use for a period of 20 or more years. These roads are built to a sufficiently high standard that the M.T.C. could take them over if public demand warranted such action. Class B haul roads are built to a lesser standard with a utilization period of less than 20 years. Class C roads are built to a low standard for resource extraction access.

Most of the District's forest access roads are of the B and C classes. Two of the three Class B roads, Clearwater West and Premier Lake, cover much of the northern half of the planning area. The Flanders Road accesses the southwestern portion of the District. The seven Class C roads are arteries stemming from the above Class B roads. Class B roads total 81 kilometres while Class C total 106 kilometres.

There are no roads running south into Quetico Park. Each year the Ministry of Natural Resources constructs an average of 10 kilometres of new roads while presently maintaining 179 kilometres of road. The many roads provide access for resource management, resource extraction, forest fire suppression and general public recreation use.

Transportation Facilities

Figure 12

LEGEND

- Highway
- Industrial and Resources Road
- Proposed Road
- Railway
- Public Airport
- Private Airport
- Float Plane Base



Source: M.N.R., 1980

4. RAILWAY AND RAIL SERVICES

The Canadian National Railway has a single major trunkline of 128 kilometres passing east-west through the centre of the planning area. The line is parallel and north of Highway 11 and is used primarily for freight services. A single spur line (which formerly services the iron mines) extends north to the Atikokan Generating Station.

5. BUS SERVICE

The Grey Goose Bus Line provides daily passenger service to Fort Frances and Thunder Bay.

6. AIR SERVICE

There are several land and water aerodromes in the planning area. Atikokan's major air facility is the municipal airport. From here NorOntair maintains scheduled passenger flights to Fort Frances, Dryden, Kenora and Thunder Bay.

A single local airfield, east of Sapawe, provides some services for both business and tourist aircraft. Two licenced seaplane bases outside of Quetico Park are located at Lac la Croix and Steep Rock Lakes. Other seaplane bases are located at Sandpoint, Nym and Eva Lakes. Ministry of Natural Resources seaplane bases are located at Lac la Croix and Beaverhouse Lakes.

P:utilities

1. POWER UTILITIES

Hydro electric power was first introduced to the town of Atikokan in 1944, when Ontario Hydro constructed the first distribution station and lines on Steep Rock Lake. In 1957, this system was taken over by the

Atikokan Hydro Electric Commission. Ontario Hydro still services the rural areas via the hydro transmission corridors that pass through the planning area.

There are five 115 kilovolt and three 230 kilovolt electrical transmission lines extending westerly across the District covering 413 kilometres. Construction of the Atikokan Generating Station, north of the townsite began in 1978. The construction of the 200 megawatt single unit station scheduled for completion in 1984, will supply additional electrical power for future demands in Ontario. Considerable controversy has developed over the possibility that environmental damages to the land, plant communities and lake and river systems could result from the emissions of this plant. (Figures 13 & 14)

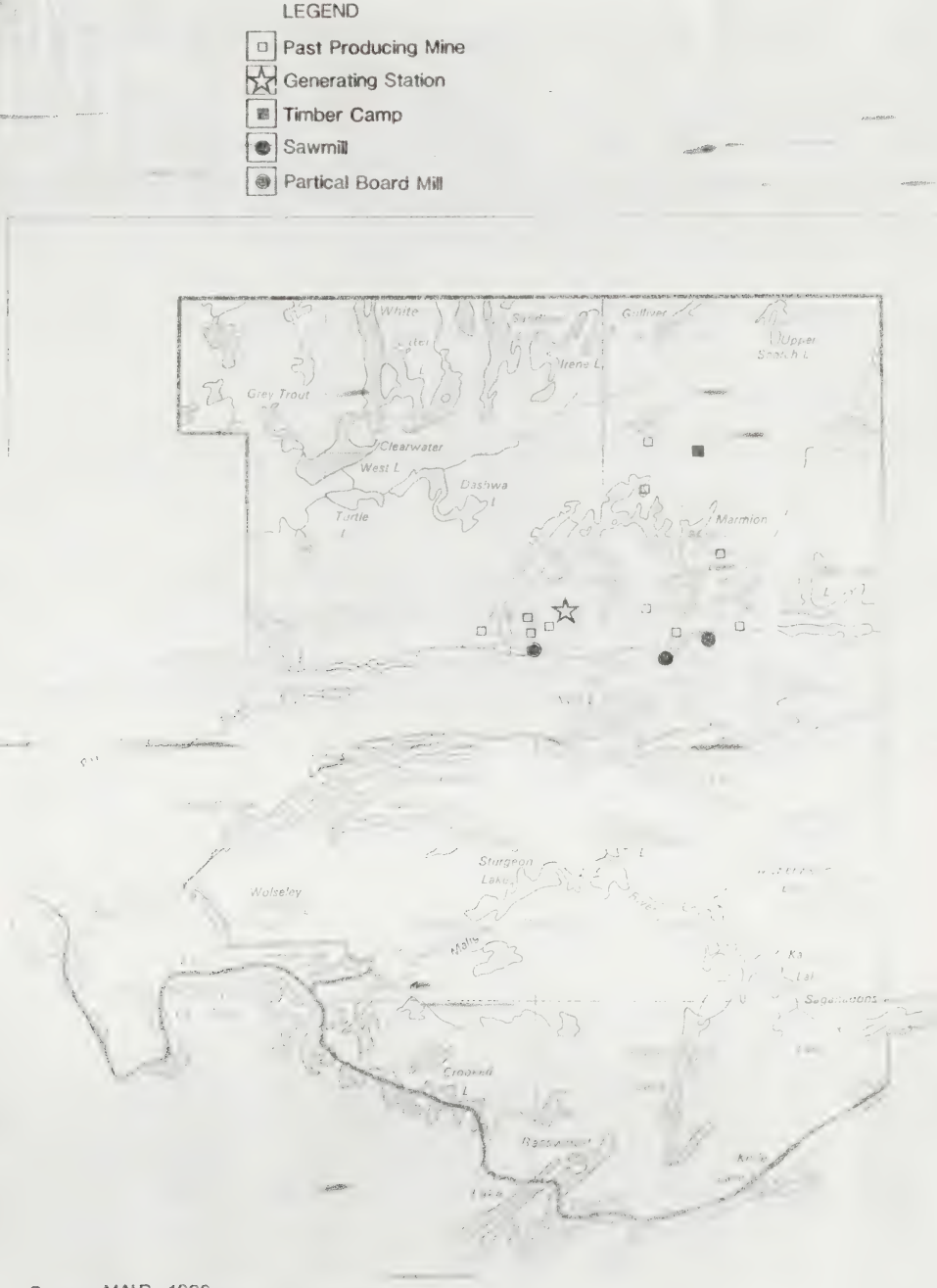
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2. DAMS

The Atikokan District lies within 3 tertiary watersheds that eventually drain westward through Rainy Lake, Lake of the Woods, Lake Winnipeg and finally to Hudson Bay. (Figure 8)

Over the years, man has made a number of changes that have affected the natural flow of water through the District. Dams were constructed to facilitate the movement of timber. Many of the major river and lake systems were dammed at numerous points. Since log driving is now obsolete, the wooden dams have fallen into disuse and disrepair. Today, while a few dams hold water levels at a point somewhat above natural levels, their effect is virtually negligible.

The Seine River system from Lac des Mille Lacs to Rainy Lake has been dammed for water level control, hydro production and as part of the Steep Rock Lake diversion and dewatering process. Water flowing out of Lac des Mille Lacs into the Seine River is controlled by a dam which regulates the lake level. The next dam is located at Raft Lake and is part of the Steep Rock Lake Diversion. Water levels in the Marmion Lake reservoir are regulated by this dam. Further downstream, the Seine has been dammed at Calm Lake and Crilly. These dams are old (late 1920's) and were built to provide power for Boise Cascade of Canada Ltd. (formerely Ontario-Minnesota Pulp & Paper Company). The dams are still functional as water retainers and power producers for the Ontario Hydro grid as well as of Fort Frances. The Calm Lake dam has a limited effect



Source: M.N.R., 1980

LEGEND

- Pipelines
- Powerlines (115 kV, 230 kV)
- M.N.R. Garbage Dump
- Municipal Solid Waste Dump
- Private Garbage Dump



Source: M.N.R., 1980

on the water levels in Calm and Banning Lakes and, to a lesser extent on Perch Lake.

Water levels in Turtle Lake and to a lesser degree in Crowrock and Dashwa Lakes are controlled at present by an old logging dam at the outflow of Turtle Lake. The dam is currently functioning as a spillway which maintains Turtle Lake at an artificial but constant level, notwithstanding normal annual fluctuations. The dam is to be replaced and will retain the existing lake levels. Presently the dam serves also as a bridge on the Clearwater West Road. When this section of the road is reconstructed as part of the Bending Lake Road project, the dam will not be used as a bridge. The new bridge will be located a short distance downstream from the existing structure.

Based on the water level created by the existing spillway dam, 45 cottage lots have been established on Turtle Lake.

When it was decided to drain Steep Rock Lake to mine the iron ore body located beneath it in 1940, a series of dams was built to divert the Seine River around Steep Rock Lake resulting in more dams. All the dams built by both Steep Rock and Caland are still in use.

The Atikokan Generating Station, presently under construction, will affect Marmion Lake and several smaller lakes. Marmion will be divided with the north half being part of the Seine River system and the south half associated with the water cooling and circulation requirements of the station. Water from the south half of Marmion will flow into Moose Lake, through the station, out into Snow, Icy and Abie Lakes and then back into Marmion in a closed circulation.

The Ministry of Natural Resources has built 2 dams in the District. One is on Pickerel Lake in Quetico Park and controls waterflow in the northeast part of the Park. This dam is slowly being phased out and will not be significant in the future. The Clearwater West dam controls levels in Clearwater West Lake and White Otter Lake. It is a wooden weir overflow dam affected by rainfall and runoff.

Water from the large watersheds in Quetico Park flows westward into Namakan Lake. A dam at the western end of the lake controls flow into Rainy Lake. (Figure 8)

3. GAS PIPELINES

A single 70 kilometre gas pipeline branch transports natural gas to the town of Atikokan from the north-east section of the planning area. (Figure 14)

4. WATER SUPPLY AND SEWAGE TREATMENT

The smaller outlying communities of the District rely on wells and lakes for drinking water and septic systems for sewage disposal.

The Township of Atikokan presently relies on the Atikokan River for its water supply. A new sewage treatment plant was completed in 1980.

5. WASTE DISPOSAL

The Ministry of Natural Resources maintains 12 garbage dumps within the planning area. There is also one municipal and two private dumps. (Figure 14)

Q:existing degree of residential development

Figure 15 portrays the general degree of residential development in the District. In order to arrive at the degree of development all family residences, cottages, lodges or motel units were counted within a grid cell area of one square kilometre. Each grid cell was then classified as either very dense (16+ or more units) dense (8 - 15 units), moderate (4 - 7 units), sparse (1 - 3 units) or none.

Dense development corresponds to major urban development found along the transportation corridors.

Development within the Atikokan District was determined using the standards given in the Ministry of Natural Resources Guidelines for Land

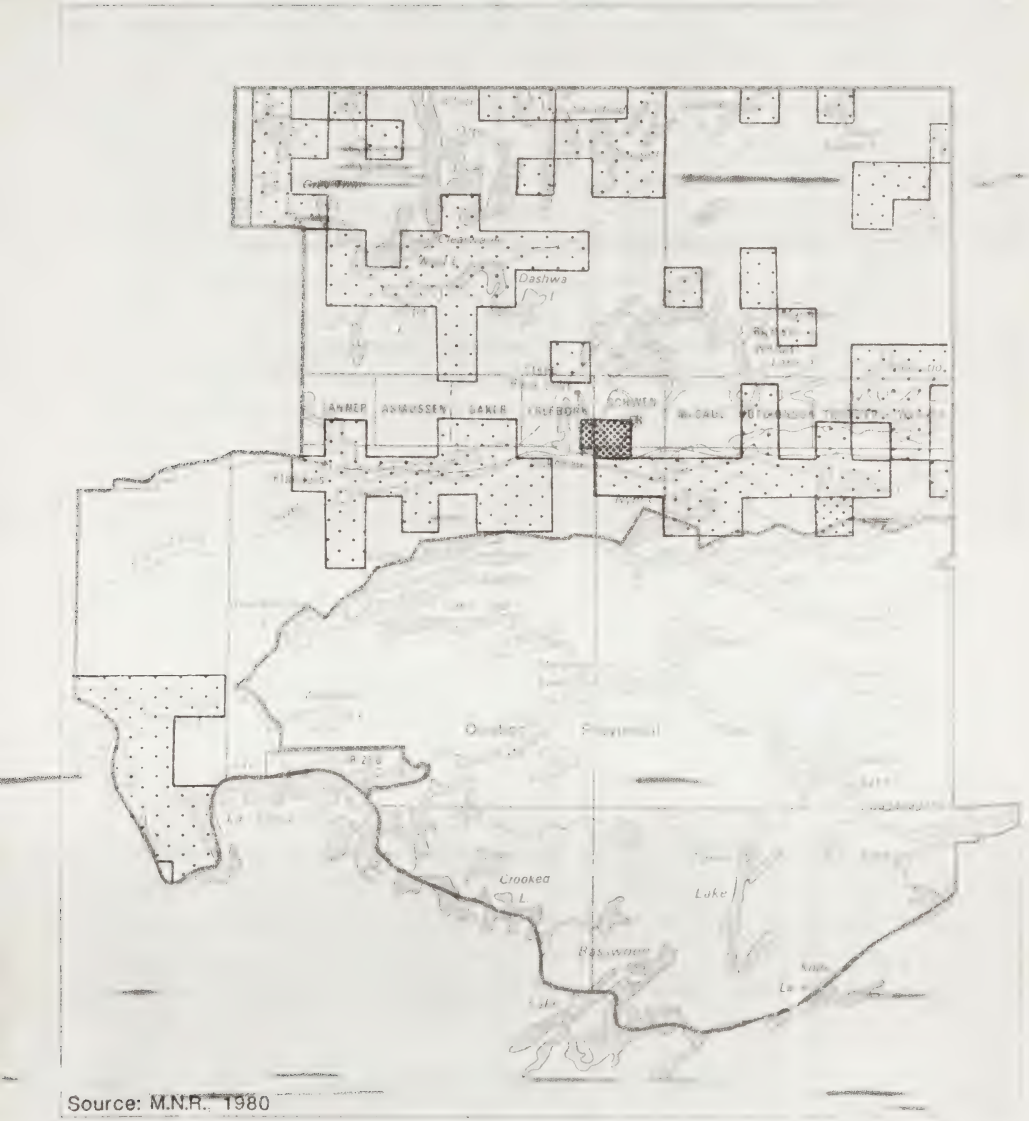
Use Planning, (1979, page 42).

Degree of Residential Development

Figure 15

LEGEND

Class	Development Units /Km^2
Very Dense	16$^+$
Dense	8-15
Moderate	4-7
Sparse	1-3
None	0



Source: M.N.R. 1980

A:mining activities

The major mining activity since 1944 in the Atikokan District has come from the production of iron in the Steep Rock Lake area near Atikokan. Production recently stopped with the closing of the Steep Rock and Caland Mines in 1979 and 1980 respectively. The two mines shipped a total of 137,800,000 tonnes of iron ore; this figure includes the 796,000 tonnes produced from iron bearing gravels by Canadian Charleston Limited from 1958 to 1965. Iron was also produced from the Atikokan Iron Mine; the mine operated between 1907 and 1911 and during this time 92,130 tonnes of ore was produced. Further exploration since that time indicates that reserves of 1,727,000 tonnes grading 53.7 percent iron are present.

There has also been minor amounts of gold produced in the District. Production figures, summarized in Table 4, indicate that 209,636 grams of gold have been extracted with most of this production coming from the Sapawe Gold Mine.

Most of the current exploration activity has been concentrated on the re-examinaton of known gold occurrences and searching for new ones. This activity has stemmed from the current price of gold which has been in the $700 and $750 range.

The Sapawe Mine was partially drained in 1980 in order to conduct a sampling program. The mine is now operated by Atiko Gold Mines Corporation Ltd. Prospecting at the Elizabeth Mine, Sunbeam, the Olcott occurrence, the Mayflower and in the Lumby Lake and Crooked Pine Lake areas have been encouraging and in several occurrences visible gold is present.

Several small ultramafic plutons have been investigated for

TABLE 4 GOLD PRODUCTION IN THE ATIKOKAN DISTRICT 1897 - 1966

Mine	Years	Ounces Gold	Ounces Silver	Tons of Ore Milled	Average Grade Gold oz/ton	Average Grade Silver oz/ton
Elizabeth	1913	20	--	50	0.40	--
J. J. Walsh	1934	21	13	350	0.06	0.04
Atiko (Sapawe)	1964-66	4,547	1,315	33,013	0.14	0.04
Sunbeam	1904	272	--	650	0.42	--
Sawbill	1897-99 1940-41	1,009	72	5,368	0.19	0.01
Harold Lake	1895-96	647	--	1,131	0.57	--
White Lily	1933	2	4	65	0.03	0.06
Hammond Reef	1897	222	--	977	0.22	--
Totals		6,740	1,404	41,604	0.16	0.03

platinum-palladium and one near Plateau Lake appears to have some promise.

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1. MINERAL POTENTIAL AND EXPLORATION

In defining the mineral potential of the area, the reader should be aware of a number of factors which can radically change the views outlined below. Current world prices for commodities are highly volatile. The increased price of gold for example has led to the re-vitalization of many gold mines across Canada. Modern technology has brought about new demands for commodities such as lithium and tantalum. New exploration techniques in geophysics and geochemistry has allowed exploration in areas of glacial overburden changing areas of low potential into high. Many of the concepts of mineral exploration and geology have so changed that geological maps from the twenties and thirties are of only cursory value. This suggests there should be a high degree of flexibility when establishing land use plans, in that areas with some known mineralization may currently have a low to moderate potential for ore but any of the above changes, may change these deposits into producing mines.

Areas which have a moderate to high potential for mineral deposits may not have the same potential for ore. The reason for this would be remoteness from markets causing high transportation costs.

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2. RESOURCE AND USE ANALYSIS

Figure 16 illustrates the mineral potential of the Atikokan District as determined from the provincial mineral potential map. The metavolcanic rocks range from moderate to high in potential as they are the source of many of the gold deposits which have become popular exploration targets since the increase in the price of gold. Several known gold occurrences are found in the granitic rocks adjacent to the metavolcanic rocks. As all of the granitic rocks have not yet been closely examined, they should rate a higher mineral potential than is illustrated.

This illustrates that the Atikokan District has promising mineral potential for such a small area especially when half the area is a park which precludes exploration. Part of a metavolcanic belt in the southeast area of the park has a high mineral potential with occurrences



Source: M.N.R., 1980

Mineral Occurrences

LEGEND

Zn Zinc	Mo Molybdenum
Ag Silver	Be Beryllium
Au Gold	Ni Nickel
Cu Copper	Pb Lead
Fe Iron	Mineral Occurrences
Li Lithium	



Source: M.N.R., 1980

of iron, gold and copper. The National Geochemical Reconnaissance carried out by the Geological Survey of Canada shows the presence of silver, arsenic, zinc and copper anomaly in lake bottom sediments associated with this belt in the south-east corner of Quetico Park. This anomaly is of similar magnitude to those associated with major base-metal deposits such as Geco. There are also showings of lithium and beryllium associated with the Poohbah Lake Complex. (Figure 17)

The traditional system of describing an area's mineral potential tends to designate granitic areas as having a low or in many instances, unknown potential. In general, the quality of geologic data is very poor in the granitic terrains. In fact, several companies have found small greenstone belts within areas previously mapped as granites. One should not totally rule out granitic terrains as they have a certain potential for uranium, tantalum and lithium, and porphyry type deposits (copper, molybdenum and gold).

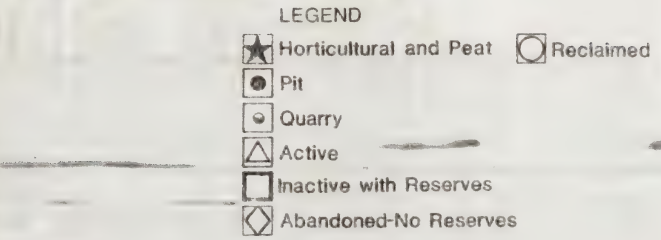
In summary, there are several areas in the Atikokan District which have a high potential to host producing mines. These remaining areas of low to moderate potential are in many cases unknown quantities and these are the areas where a degree of flexibility should be allowed in land use.

B:aggregate potential

The major source of aggregate is generally the sand and gravel in the moraines and glaciofluvial deposits formed during the Pleistocene ice age. The distribution of sand and gravel pits in the Atikokan District is shown on Figure 18; most pits correspond with the moraine deposits shown on Figure 4. In high potential areas, the chance discovery of economic sand and gravel deposits is good. In areas which are rated as having moderate potential, there is a fair chance of locating economic deposits.

Aggregate Operations and Peat Areas

Figure 18





Source: M.N.R., 1980

1. RESOURCE AND USE ANALYSIS

The Eagle-Finlayson moraine is one of the major sources of aggregate. Much of the aggregate in this moraine is of poor quality because of unfavourable size and texture characteristics; however, locally valuable deposits with potential for increased extraction do exist.

Gravel pits are also present along Highway #11 where the ground moraine [illegible] thickness.

C:peat

Recent organics (peat and muck) occur locally throughout the District. Generally, peat consists of partially decomposed organic debris which has accumulated under deoxygenated and saturated conditions.

Current policies of the Ministry of Natural Resources indicate that studies of peat potential will take place over the next few years. These studies will include inventories and marketability of peat as an energy source to increase Ontario's self sufficiency in energy. The present target is for Ontario to be 37.5 percent energy sufficient by 1995 (1 percent is associated with coal/peat).

1. RESOURCE AND USE ANALYSIS

The Atikokan District currently has one ongoing peat extraction operation. It, like two similar operations which ceased production over 10 years ago, produces horticultural grade peat for local use in gardens and landscaping.

As Atikokan does not have large peat lands, its potental for producing significant quantities of peat for energy generation is low. Local deposits of low quality peat will likely meet the horticultural demands of the local area in the future.

D:agriculture

In conforming with the Ontario Foodland Guidelines, the Ministry of Natural Resources will ensure that classes 1, 2, 3, and 4 soils, as defined in the Canada Land Inventory, Soil Capability for Agriculture, are identified as agricultural lands. These areas are recognized as foodlands available for future food production in accordance with an agreed to plan, implemented in cooperation with the Ontario Ministry of Agriculture and Food.

1. RESOURCE AND USE ANALYSIS

Due to topography and soil depth constraints, the above noted land classifications are non-existent in the District.

Generally the landbase of the area is classified as moderately broken uplands with variable soil depths. Soil composition is sand and other materials with extensive bedrock exposure. Capability and potential for agriculture are low. There are no extensive agricultural activities presently being carried out in the Atikokan District. There is small crop gardening by local residents.

E:forestry

1. FOREST RESOURCE BASE *(Crown land only based on 1965 FRI Inventory)*

TABLE 5 PRODUCTIVE, PRODUCTION & PROTECTION FOREST IN ACRES BY MANAGEMENT UNIT/WORKING CIRCLE - CROWN LAND: ATIKOKAN DISTRICT

Management (Unit) Area	FOREST CLASSIFICATION Production Forest Site Classes I, II, III (Acres)	Protection Forest Site Classes IV (Acres)	Productive Forest All Site Classes (Acres)
Flanders CMU			
Pipestone working circle	340,578	21,090	361,668
Quetico Provincial Park			
(Formerly Quetico Crown Management Unit)			
Hunters Island W.C.	381,748	13,850	395,598
Jean Lake W.C.	180,404	5,180	185,584
Jim Mathieu W.C.1	230,998	4,514	234,512
Boise			
Seine Concession	199,689	9,141	208,830
Sapawe CMU			
J. Mathieu W.C.2	247,940	5,448	253,388
White Otter W.C.	113,990	11,118	125,108
Former Great Lakes	105,318	612	105,930
491914/492913	56,108	240	56,348
District Total: Acres	1,856,773	71,193	1,927,966
Hectares	751,729	28,823	780,553

TABLE 6 SUMMARY OF CROWN PRODUCTION FOREST (SITE CLASS I, II, III) BY WORKING GROUP (Acres) - ATIKOKAN DISTRICT

Management (unit) area	Working Group (Area in Acres)									Total All Working Groups
	Pw	Pr	Pj	Sp	Bf	Oc	Po	Bw	Oh	
Flanders										
Pipestone W.C.	6,850	1,062	99,026	55,962	2,820	1,618	140,042	32,758	440	[illegible]
Quetico Provincial Park (formerly Quetico Crown Mgmt. Unit)										
Hunters Island W.C.	14,642	26,352	114,382	97,406	13,126	5,824	76,640	32,666	710	381,748
Jean Lake W.C.	5,419	1,884	39,966	27,156	5,532	2,608	72,102	25,260	486	180,404
Jim Mathieu W.C. 1	6,682	4,748	77,352	74,960	10,096	2,158	34,796	19,442	764	230,998
Seine										
Seine Concession	1,050	3,301	63,974	77,407	7,744	2,062	15,701	28,196	254	199,689
Sapawe CMU										
J. Mathieu W.C.2	4,978	606	61,990	57,128	13,322	--	89,648	20,242	26	247,940
White Otter W.C.	2,184	690	47,656	17,506	3,866	98	9,822	32,168	--	113,990
Former Great Lakes	2,636	--	14,456	42,176	11,534	932	11,780	21,804	--	105,318
491913/492913	740	--	32,954	8,440	62	--	9,632	4,280	--	56,108
Production Forest Totals:										
Acres	45,181	38,643	551,756	458,141	68,102	15,300	457,531	216,816	2,680	1,856,773
Hectares										751,730

TABLE 7 CROWN LAND AREA PRESENTLY COMMITTED TO FOREST OPERATIONS WITHIN THE ATIKOKAN DISTRICT
(Portion of Production Forest Area which forms part of Calculated Annual Allowable Cut)

Management (unit) area	Working Group (Area in Acres)									Total All Working Groups
	Pw	Pr	Pj	Sp	Bf	Oc	Po	Bw	Oh	
Flanders CMU										
Pipestone W.C.	6,850	1,062	99,026	55,962	2,820	1,618	140,042	32,758	440	340,578
Boise										
Seine Concession	1,050	3,301	63,974	77,407	7,744	2,062	15,701	28,196	254	199,689
Sapawe CMU										
J. Mathieu W.C.2										
White Otter W.C.	8,522	--	146,107	118,287	25,918	167	114,839	63,981	--	477,821
Former Great Lakes										
491913/492913										
District Total: Acres	16,422	4,363	309,107	251,656	36,482	3,847	270,582	124,935	694	1,018,088
Hectares										412,181

The Atikokan District contains approximately 1,927,966 acres (780,826 hectares) of productive forest area. Productive forest land is normally subdivided into two further categories, production forest and protection forest.

Of the total productive forest area, only that portion in the production forest category is considered capable of supporting commercial forestry operations. Protection forest is not deemed to be operable for sustained harvest operations because of shallow soils, extremely broken terrain, etc..

Table 5 indicates the area of productive forest Crown land (including production and protective forest land components) by management unit for the Atikokan District.

Table 6 represents a summary by working groups of the production forest land component for each of the management units.

Table 7 outlines the portion of the production forest area of the District presently committed to forest operations and is the area on which allowable cut data has been calculated. It does not include Jim Mathieu W.C. #1, Hunters Island and Jean Lake working circles or the area presently within the White Otter Lake Park Reserve. Reductions for additional park land, road construction, gravel pits, mining claims, lake cottage development, fish and wildlife reserves, sensitive sites, have not been made.

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2. FOREST REGIONS

Refer to Vegetation, page 12.

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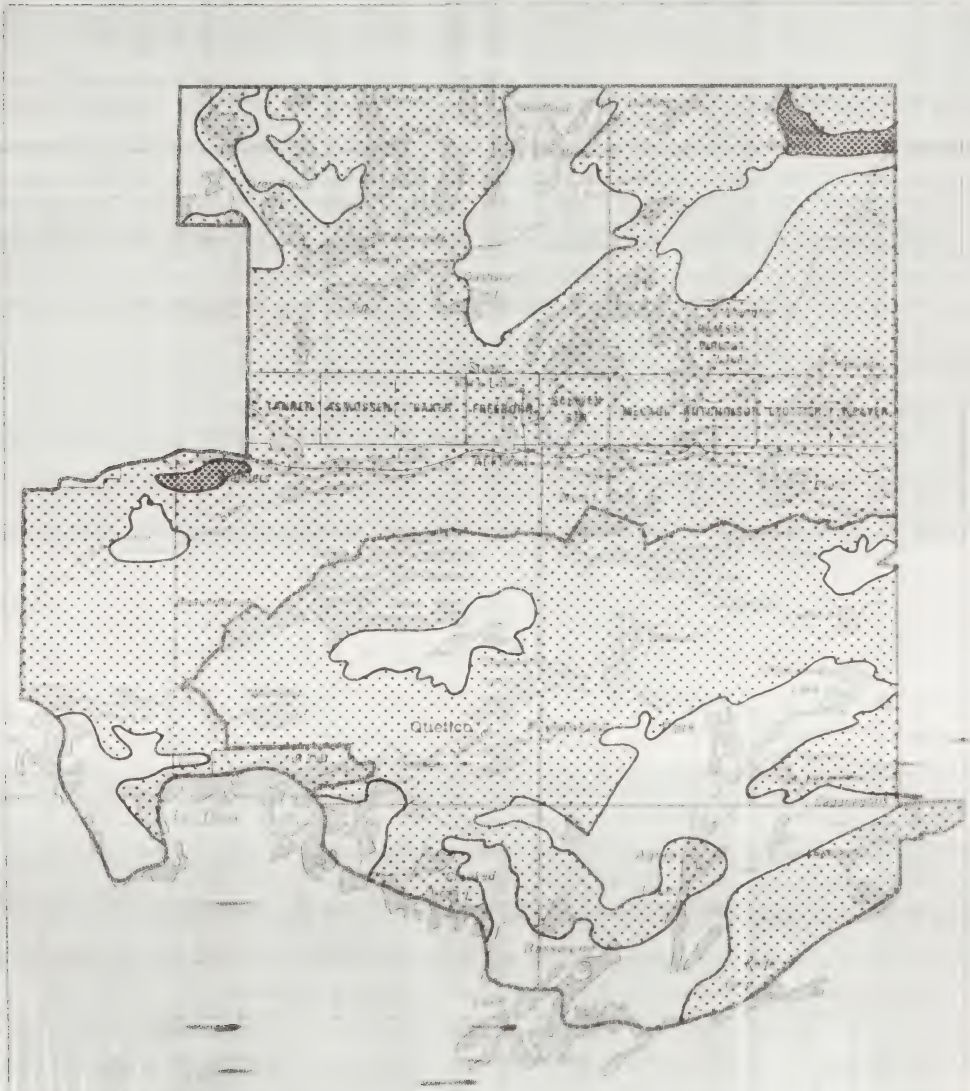
3. TIMBER CAPABILITY

a. Ontario Land Inventory

An inventory system known as the Ontario Land Inventory was developed early in the 1970's to supplement the Forest Resource Inventory. The Atikokan District was inventoried during this period. (Figure 19) This system would enable productivity comparisons between the various site regions (as defined by G. A. Hills) within the province. The Atikokan District lies almost entirely within site region 4W. (Figure 20)

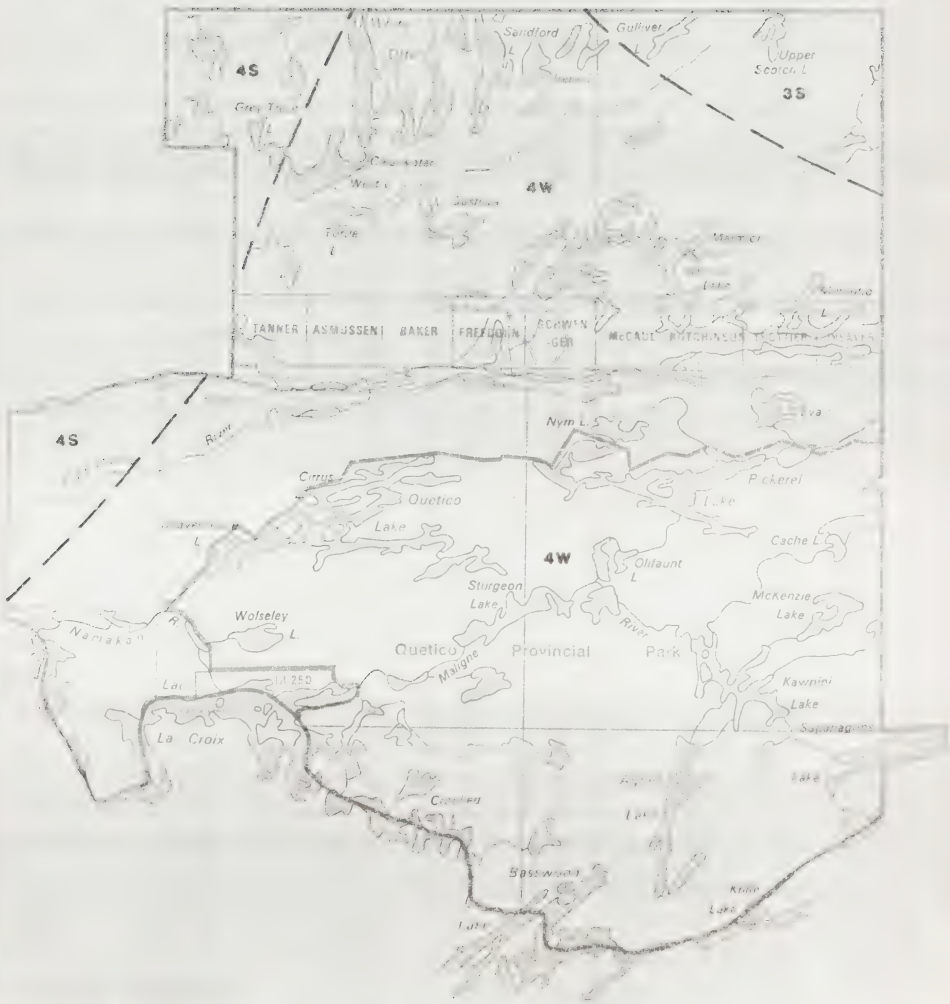
LEGEND

Productivity	Class	Range cu. ft./ac/yr	Average cu. ft./ac/yr
High	1,2,3	51-90	70
Moderate	4,5	11-50	30
Low	6,7	0-11	5.5



Source: O.L.I., 1976

Forest Site Regions Figure 20



Source: Hill, G.A., 1959

The following is a general outline of the information on timber capability derived from O.L.I. data. The data relates to the present production forest land base, the S.L.U.P. target (revised 82:01:13) and the Forest Production Policy target for the Atikokan District.

Several of the seven O.L.I. classes have been subjectively grouped to indicate high, moderate and low capability classes for timber production as follows:

High - 4.90 cubic metres per hectare per year
Moderate - 2.10 cubic metres per hectare per year
Low - 0.38 cubic metres per hectare per year

The weighted average (weighting based on amount of land area in each class) for timber production per hectare per year is 1.69 cu. m/ha/yr gross total volume.

Reducing the gross total volume to net merchantable volume (reduction for tops, stumps and cull) was effected by reducing the gross total volume by 30%. *ie. 1.69 x (1.0 - 0.3) + 1.18 cubic metres per hectare per year*

The total land area presently committed to the production of wood fibre within the Atikokan District is 1,018,088 acres or 412,181 hectares. (Table 7)

From the previous calculations, the total annual yield of wood fibre from this land base can be estimated as follows:

1.18 x 412,181 = 486,373 net merchantable cubic metres per year
(171,761 cunits per year)

Applying the timber production figure calculated from the O.L.I. (1.18 cu metres per hectare per year) to the total production forest area of the District, (1,856,773 acres or 751,730 hectares; which includes production forest land presently not committed to fibre production, i.e. wilderness parkland) the potential estimated total annual yield of wood fibre would be: 1.18 x 751,730 = 887,041 net merchantable cubic metres per year (313,256 cunits per year)

b. S.L.U.P. Targets

The Atikokan District timber production target (based on present

commitment to existing industry) is 603,000 net merchantable cubic metres annually (362,000 m of conifer and 241,000 m of hardwood). This approximates 212,947 cunits annually.

Comparing this figure to that developed using the O.L.I. and the present land base committed to fibre production, there is a shortage as follows:

ie. $\frac{488,374 \text{ cu. m/yr}}{603,000 \text{ cu. m/yr.}} = 80.6\%$ *of present S.L.U.P. target*

This deficit is larger considering that the actual production forest land base should be further reduced because of losses to such things as modified management areas, gravel pits, sensitive sites, mining and cottaging.

In order to meet the assigned S.L.U.P. target, it would be necessary to increase the forest area presently committed to the production of wood fibre.

c. Forest Production Policy Target

The production Policy Target for the Atikokan District is 180,000 cunits annually (509,702 cu. metres).

In order to meet the assigned target on a sustained yield basis (assuming the O.L.I. average productivity of 1.18 cu. m/ha/yr.) it would be necessary to increase the production forest area presently committed to the production of wood fibre, or alternately improve the level of forest management to increase the productivity per hectare, thereby enabling the same volume of timber from a smaller land base.

ie. $\frac{488,374 \text{ cu. m/yr}}{509,702 \text{ cu. m/yr}} = 95.4\%$ *of existing forest production policy target*

4. FOREST OPERATIONS

a. History

A brief history of the early lumbering industry within the District is on page 18.

b. Present Forest Use

There are presently four milling facilities for forest products within the District. The District also supplies substantial quantities of material (mainly conifer) to mills outside the District. A brief outline of wood flow and milling facilities follows.

(i) Atikokan Forest Products Sawmill. Located at Sapawe, 32 km east of Atikokan, is a subsidiary of Buchanan Brothers (Ont.) Limited purchased

from Domtar Inc. in March of 1981.

The operation employs approximately 118 people in the mill and 50 people in bush operations. In addition the mill has third party contracts for the supply of wood which increases the number of persons who derive employment from the mill.

The mill has an annual average lumber production of approximately 93,333 cubic metres with a production of approximately 445.36 mbd tonnes of chips.

Wood requirements for the mill average 226.530 net merchantable cubic metres annually.

The company has been unable to avail itself of a long term supply of sawlog material. The present mill requirement exceeds the supply committed to Atikokan Forest Products Inc. from the District. The Ministry is endeavouring to aid the company by issuing directives to surrounding companies for them to supply Atikokan Forest Products Inc. with additional volumes of wood at a mutually suitable price. A long term solution to the supply problem has not yet been found.

(ii) Pluswood Manufacturing Limited - Atikokan. The Pluswood particle board facility is located in Atikokan. The operation employs approximately 135 people in the mill and another 19 in bush operations. As well wood is purchased from several local contractors thereby increasing the number actually employed in bush operations.

Production in 1979 totalled 79,696 cubic metres of particle boards. The company has recently undergone an expansion.

Total mill requirements when in full production are expected to be approximately 200,000 cubic metres annually.

(iii) Foothills Timber Limited. In 1978 Foothills Timber Limited began logging over-mature white pine in the District. Their small mill is located 25 kilometres east of Atikokan and employs about 20 people. In 1978, there was a nine year supply of white pine totalling 50,000 net merchantable cunits available to Foothills.

Annual production has tended to fluctuate in the short period of time it has been operating. This is due mostly to market fluctuations in the price of lumber. A total of 3,733 cubic metres of dimension lumber was produced in 1979. As of 1983, approximately 40,000 net merchantable cunits remain available for the operation.

c. Other Forest Operations

The majority of the pulpwood cut within the District from the Flanders Crown Management Unit and the Seine Concession is trucked to the Boise Kraft mill in Fort Frances. Most of this wood is cut by contractors holding contracts with Boise Cascade of Canada Limited. Many of these operators hire cutters from the Atikokan area.

Chips produced as a by-product a the Atikokan Forest Products mill in Sapawe are also utilized by Boise in Fort Frances.

Small amounts of pulpwood from the Flanders Crown Management Unit are purchased by Great Lakes Pulp and Paper Company in Thunder Bay, where market conditions offset the cost of the extra hauling distance.

Small quantities of railway ties are also produced by two contractors in the Flanders Crown Management Unit.

The Inwood Forest Products mill in Upsala is also partially dependent on a supply of white pine from the Sapawe Crown Management Unit. Figure 21 shows past, present and future timber operations.

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5. REGENERATION

The Ministry of Natural Resources, through its Forest Management Plan, is charged with the responsibility of regenerating the cutover forest land within the District.

That portion of the Atikokan District, within the Boise Seine Concession, will shortly be covered under a Forest Management Agreement. Under this agreement Boise will be responsible for regenerating the cutovers within the agreement area. Consequently forest regeneration operations conducted by the Ministry will generally be limited to the Flanders and Sapawe Crown Management Units.



Source: M.N.R., 1980

A three year average of regeneration operations within the Atikokan District is as follows:

Regeneration	Acres	Hectares
Planting Nursery Stock	1,995	[illegible]
Planting Container Stock	103	[illegible]
Seeding	3,473	[illegible]
Scarification	[illegible]	[illegible]
Strip Cutting	[illegible]	[illegible]
Seed Trees	[illegible]	[illegible]
Total	[illegible]	[illegible]
[illegible]	1,683	[illegible]
[illegible]	2,107	[illegible]

The required level of silvicultural work to maintain the present District Production Policy target of 180M cunits (as taken from implementation schedule for 1982/83) is as follows:

	Acres	Hectares
Harvest cut	11,900	4,820
Natural no cost regeneration	3,570	1,446
Not treatable	2,110	855
Requires treatment	6,220	[illegible]
Regeneration		
Planting nursery stock	2,500	[illegible]
Planting container stock	500	[illegible]
Direct seeding	2,200	[illegible]
S.I.P. and seeding	400	[illegible]
Scarification	300	[illegible]
Strip cutting	200	[illegible]
Seed tree cutting	120	[illegible]
Total Regenerating	6,220	[illegible]
Tending	1,800	729
Site Preparation	3,700	[illegible]

It should be noted that the differences from the three years average of Silvicultural Operations and that proposed are due mainly to a slight undercut, where fewer acres were cutover and therefore fewer acres were treated.

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6. FOREST FIRES, INSECTS AND DISEASE

There have been no major impacts on the forest resource base due to the effects of forest fires, insects or disease.

Of the three, insects are probably the most destructive within the District. The spruce budworm and the pine shoot borer cause the most damage of all insects.

Concentrations of spruce budworm are most prominent in a few areas of Quetico Provincial Park and one area in the northeast portion of our District, adjacent to Bennett Township.

The pine shoot borer can be found in generally all the regenerating jack pine cutovers.

Spraying has not been required to control either of these insects.

The federal government through the Great Lakes Forest Research Centre monitors insect and disease population annually within the District. An annual report of insect and disease levels is available in the District Office.

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7. FOREST RESEARCH

There are no significant areas of forest research within the planning area.

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8. RESOURCE AND USE ANALYSIS

Projected wood requirements indicates an increased demand for all forms of forest products. To meet this demand within the District it may be necessary to implement two basic changes such as:

a. Increase the forest management effort on the production forest land base presently committed to fibre production, and

b. improve the utilization of wood fibre from existing forest reserves.

F:commercial and sport fish programmes

1. HISTORY OF COMMERCIAL FISHING

There has been little commercial fishing except for baitfish in the planning area. There have been some commercial licences for whitefish and sturgeon issued periodically, all on a small scale basis. None of these efforts proved economically viable and soon ceased.

Experimental commercial fishing has occurred in the District. In 1969 and 1970, Sandford Lake was licensed for whitefish. Marmion and Crooked Pine Lakes have been fished under the authority of an experimental permit. These programs were not extended because they were not economically viable.

Most of the District lakes are not capable of sustaining a commercial fishery because of their limited size. However, groups of lakes could be licensed and fished on a rotating basis. At present, there are no active licensed commercial fishing operations within the District. Fort Frances District however, has issued licenses to fish on Namakan and Mount Lakes, parts of which are in the Atikokan District.

2. RESOURCE AND USE ANALYSIS

The District is not developed to its commercial fishing potential. There are opportunities for seasonal operations for small quotas of whitefish and coarse fish.

3. FISHERIES PROGRAMS

a. The Bait-Fish Fishery

Bait fishing represents another form of commercial fishing within the

District. It is administered by a block licensing system. The 60 blocks within the District range in size from 94 to 260 square kilometres. Excluding Quetico Park and the White Otter Lake Park Reserve, the entire District is licensed for commercial baitfishing. The total harvest in 1979 from these licenses was 50,407 dozen, for an approximate value of $47,510. If a demand occurs for expansion in the bait-fish industry, some blocks may have to be re-assigned.

b. Fish Sanctuaries

Fish sanctuaries have been established within the District to protect lake trout during periods when they are most vulnerable to angling (Figure 22). Lakes with sanctuaries include:

(i) The White Otter Lake This sanctuary was imposed to prevent continued overfishing of lake trout and yellow pickerel that occurred in late May and early June. The pressure was mainly from non-residents. Closure dates are May 15 to June 15 annually.

(ii) Lilac and Trout Lakes These lakes contain lake trout and bass. The trout have been subjected to heavy pressure in the winter. The sanctuary was designed to prevent winter fishing while allowing a summer fishery. It is expected that the majority of future fishing will be for bass, although some trout will undoubtedly be taken. These lakes are closed annually from October 1 to May 31, allowing for the utilization of the bass populations during the summer. Heavy angling pressure results from non-residents because of the proximity of the lakes to the Canada - U.S. Boundary.

(iii) Little Greytrout, Secret, Rutter and Crook Lakes These are small lake trout lakes that were previously heavily angled during the winter. The construction of the Bending Lake Road has simplified access to these lakes and will increase angling pressure. The imposition of a sanctuary should prevent deterioration of the fisheries. Closure dates are February 1 to June 30 and August 1 to December 31.

c. The Strategic Plan for Ontario Fisheries (S.P.O.F.)

In this area, the plan is committed to the maintenance and protection of healthy fishery resources, and to the rehabilitation of those that have become degraded. To accomplish this, seven lakes in this District are being studied intensively to determine the effects of a variety of stresses varying from heavy angling pressure to introductions of undesirable species, (smelt) and possible water pollution caused by acid rain. The lakes selected for study in this program are: Pekagoning,

Little Gull, Crooked Pine, Agnes, Pickerel, Robinson and Niobe Lakes. (Figure 22)

d. Lake Inventory Program

A lake inventory provides basic data regarding the chemical physical and biological properties of a water body. This program has been ongoing since 1957 and was standardized in 1968. Approximately 10 lakes are surveyed annually. (Figure 23)

e. Creel Census

Fish and Wildlife staff have conducted creel census studies on various lakes throughout the District. This has been done to determine the effect of winter angling, especially on lake trout lakes. Information on these studies is on file.

f. Mercury Sampling Program

Various lakes have been sampled for the mercury contaminant monitoring program. The lakes were selected because of heavy use and their geographical distribution. Information on these studies is available in District files.

g. Scale Samples

There has been some live netting of fish conducted to collect scales for aging purposes. Lengths and weights were recorded to determine growth rates for White Otter Lake fish.

h. Fish Transfers

Adult walleyes have been transplanted to the Rawn Reservoir, Williamson, Marion and Lerome Lakes. It is hoped that each of these lakes will develop a self-sustaining walleye population.

Rainbow smelt are present in the following lake trout lakes: Eva, Pickerel, French, Marion and Crystal. To date, we are unable to predict the impact on the lakes, especially to trout.

There have been some small mouth bass transferred to various lakes. These were transferred without the knowledge of Ministry of Natural Resources staff.

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4. SPORT FISHERY

Both cold and warm water lakes can be found throughout the District with angling equally dispersed between the two fisheries. The cold water fishery consists mainly of lake trout and lake whitefish. In the shallower, more productive warm water lakes, yellow pickerel and

Lake Trout Sanctuaries and SPOF Assessments Figure 22

LEGEND

▲ Lake Trout Sanctuary

● SPOF Assessment



Source: M.N.R., 1980

Lakes Surveyed

Figure 23

LEGEND

Lakes Surveyed



Source: M.N.R., 1980

northern pike are the main angling species. The warm water species habitat is more extensive than the cold water.

Fish stocking is not generally an acceptable management technique, except for introducing a fish species into new waters, or to re-establish a fishery that has disappeared. "Put and take" stocking will not usually be conducted but might be considered in the future.

Many lakes have been designated as lake trout lakes and will be managed for this species. Shoreline development, access, and eutrophication (artificial enrichment) will be minimized. Prior to 1983 trout lakes within the District were divided into three classifications as follows:

Class 1 - high quality large lakes on which no shoreline development will occur.

Class 2 - also high quality lakes having limited development.

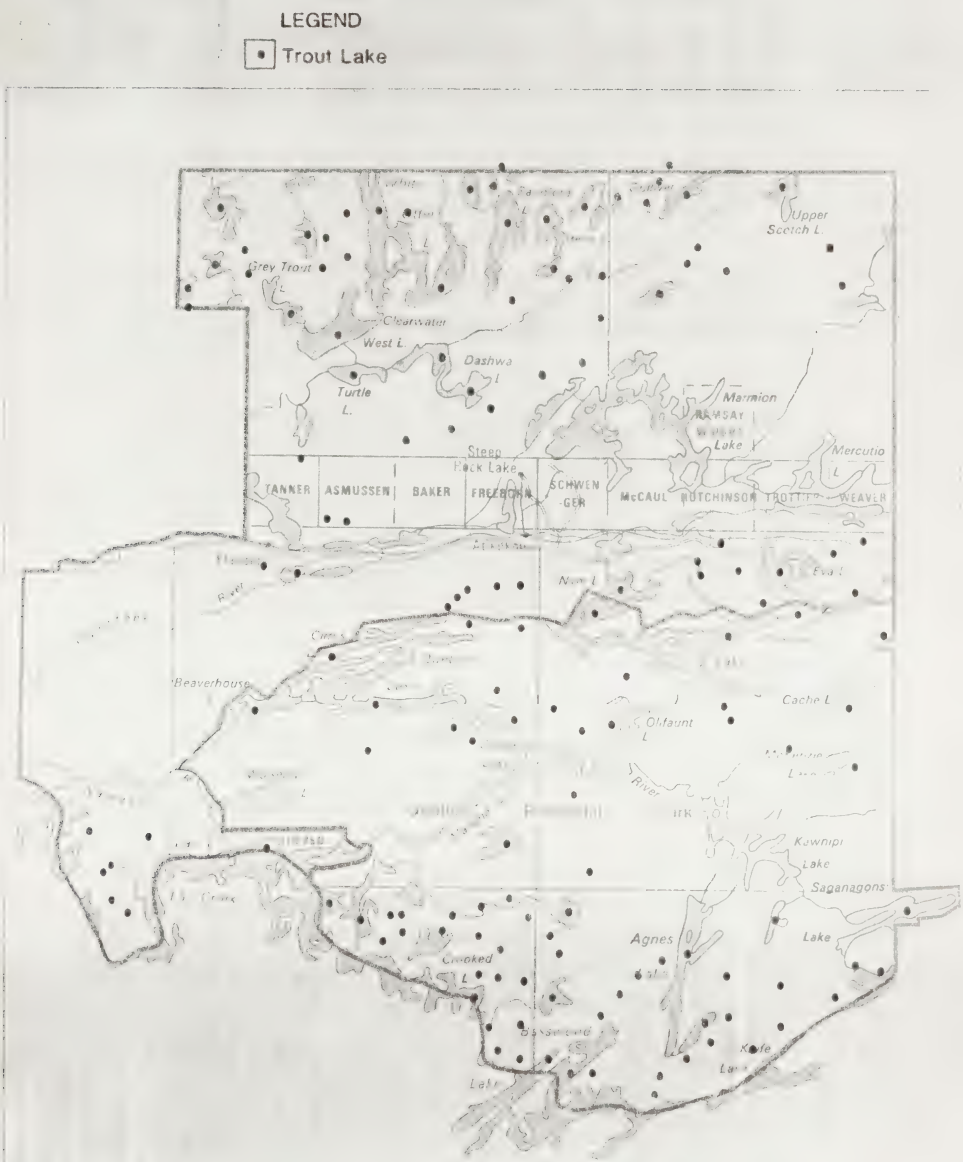
Class 3 - known lake trout lakes on which no special management techniques will be applied.

Starting in 1983, lake trout lakes were classified as "prime" and "other". Prime lakes are those with high water quality and a good trout fishery. Other lakes usually have a lower quality angling experience and water quality may be affected.

There are 166 known trout lakes in the District, including Quetico Park. There are 67 prime lakes and 15 other outside of Quetico Park. (Figure 24)

Angling is an important recreational pass time of approximately 25% of the local population. Total angler days for residents and non-residents for the 1979 season were estimated at 140,000.

Spring and summer angling is mainly for lake trout, yellow pickerel and northern pike. Winter fishing is carried out by both local and non-local anglers, primarily for trout. Angling pressure is lowest in the fall. Most summer angling is concentrated on lakes adjacent to Highway 11 and along the many logging roads in the District. Lakes that must be reached by portage or by aircraft generally receive much less pressure. With snow machines, virtually all of the District is accessible in the winter with the exception of Quetico Park where no motorized vehicles are permitted.



Source: M.N.R., 1980

5. RESOURCE AND USE ANALYSIS

The present supply of most sport fish in the District seems sufficient to meet the current demand, but an imbalance will result in time as demand increases. Lake trout will require more intensive management to maintain present populations. The main limiting factor with this species is over-fishing.

The demand for lake trout and walleye might result in a reduced level of user satisfaction if these species become scarce and it takes more effort to catch fewer fish.

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6. PRODUCTIVITY

a. Cold Water Lakes

The Atikokan District presently (July 1981) has 166 known lake trout waters for a total of 114,787 hectares.

Cold water or oligotrophic lakes in the District have an average potential annual yield of 1.84 kilograms/hectare of all fish species, therefore, the total potential annual yield from cold water lakes is 211,208 kilograms. It is estimated that a total of 52,802 kilograms of lake trout are produced annually. (Based on avarage production figures for the District 0.46 kg/hectare of lake trout are produced annually).

b. Warm Water Lakes

A total of 253 lakes in the District are known warm water or mesotrophic lakes for a total of 94,257 hectares. Warm water lakes in the District have an average potential annual yield of 2.92 kilograms/hectare for all fish species, therefore, the total potential annual yield for warm water lakes is 275,231 kilograms. In addition, 3% of this total has been added as river production.

Therefore the total potential annual fish yield for the District is estimated to be 494,696 kilograms of fish which includes all species, composed of game fish such as pickerel, pike, and coarse fish such as suckers. As a rule, total productivity is represented by 40-50% coarse fish and 50-60% sport fish.

The capability of a lake to produce fish is measured by its productivity or morphoedaphic index (M.E.I.). The morphoedaphic index is derived by measuring the mean depth of a lake and expressing it against the

measured amount of total dissolved solids in the water. The morphoedaphic index is then used to estimate the total weight of fish produced per hectare per year.

G:wild rice

Wild rice beds are not extensive in the Atikokan District. There are approximately 203 hectares of rice beds with a capability of producing a harvest of 450 - 900 kilograms per year; harvests will vary directly with growing conditions, water level fluctuations, and harvesting efforts. Rice is lightly harvested by the Seine River and Lac la Croix Indian Bands. The 1979 annual wild rice harvest totalled 120 kilograms, therefore, there is potential for a slightly larger yield. Cranberry and Pear Lakes located in the extreme southwest section of the District are noted for their abundant rice. Lakes in which wild rice was introduced between 1974 and 1980 included; Pipe, Whalen, Price, Mink and Plateau. Potential lakes for wild rice introductions include: Arnold, Car, McQuat, Darby, Gilbert and several small lakes north of Highway 11 east of Gilbert Lake and two small unnamed lakes south of Captain Tom. (Figure 25)

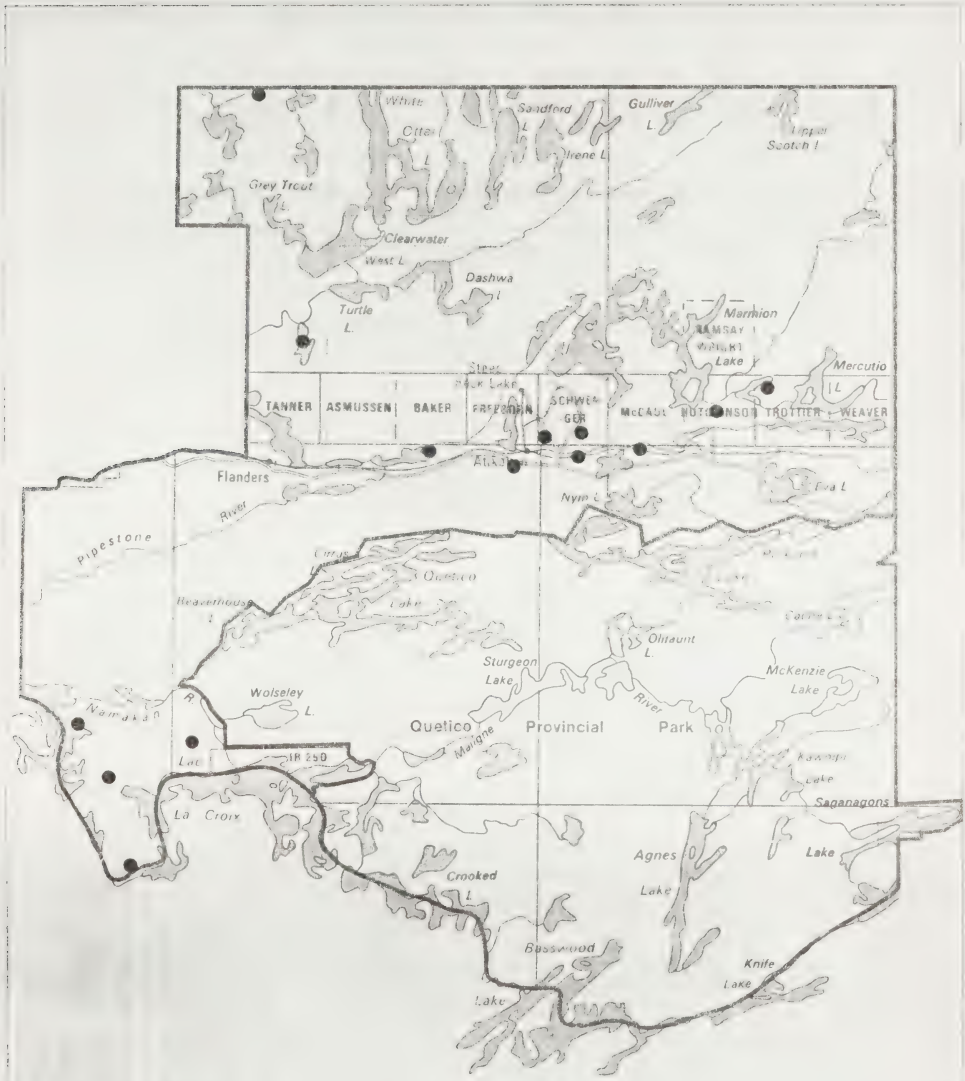
1. RESOURCE AND USE ANALYSIS

The District has 180 hectares of wild rice that are harvested each year, for an average yield of 270 kilograms.

Future expansion of this resource is possible because many of the shallow waters of the District have not been analyzed to determine if rice will grow.

LEGEND

Wild Rice Area



Source: M.N.R., 1980

H:wildlife

1. NATIVE SPECIES

Wildlife species found within the Atikokan District are those usually associated with the boreal forest. Some of the more common species are: moose, deer, black bear, beaver, mink, muskrat, otter, pine marten, varying hare and red squirrel. Terrestrial bird species such as the common raven, common crow, spruce and ruffed grouse, great grey owl, grey and blue jay, pileated, downy and hairy woodpecker, osprey, and bald eagle are also common. The predominant aquatic bird species are the common loon, common merganser, black duck, goldeneye, mallard and herring gull.

Many of the above wildlife species and others too numerous to mention provide both consumptive and non-consumptive uses.

2. CAPABILITY FOR WILDLIFE

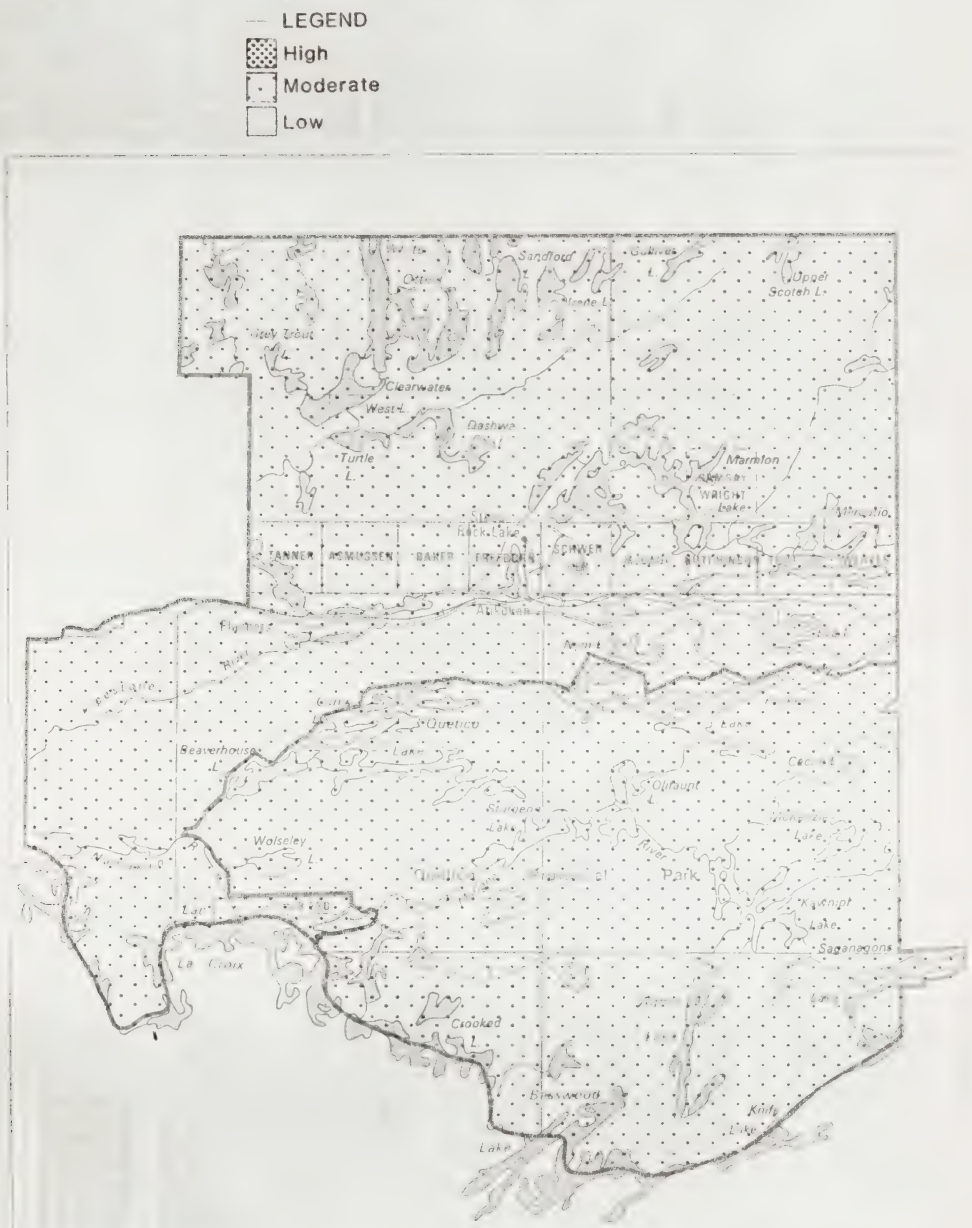
The Canada Land Inventory (C.L.I.) is a system for rating the capability of land to naturally produce food and shelter for a particular species (moose and deer are the species referred to). Suitable habitat provides a sufficient quality and quantity of food, protective shelter and space for survival, growth and reproduction.

The capability of the Atikokan District, as described by the C.L.I. is generally moderate. (Figure 26)

3. MOOSE AND DEER DENSITIES

Both moose and deer are present within the District and are dispersed throughout.

Moose are generally found in greatest densities in the eastern portion of the District. They are less numerous in the western part, although



Source: C.L.I., 1969

small areas of high density are found there. (Figure 27)

Deer are not as widely dispersed as moose and are mainly found in the western part of the District from Grey Trout Lake south to the Namakan River. (Figure 28)

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4. HUNTING PRESSURE

Big game hunting is a popular outdoor recreational activity with the emphasis on moose hunting.

Wildlife management units were established in Ontario in 1975 to help manage big game populations. The Atikokan District contains parts of wildlife management units 11 and 12. Unit 11 is 9,574 square kilometres in area and includes Quetico Park and Unit 12 is 10,563 square kilometres. Parts of Unit 11 fall within Thunder Bay and Fort Frances Districts. Portions of Unit 12 lie in the Thunder Bay and Ignace Districts. (Figure 29)

Results of a mail survey in 1979 show that big game hunters spent 12,415 days in pursuit of moose, deer and black bear. Table 8 shows the District big game harvest.

TABLE 8 ATIKOKAN DISTRICT BIG GAME HARVEST 1979

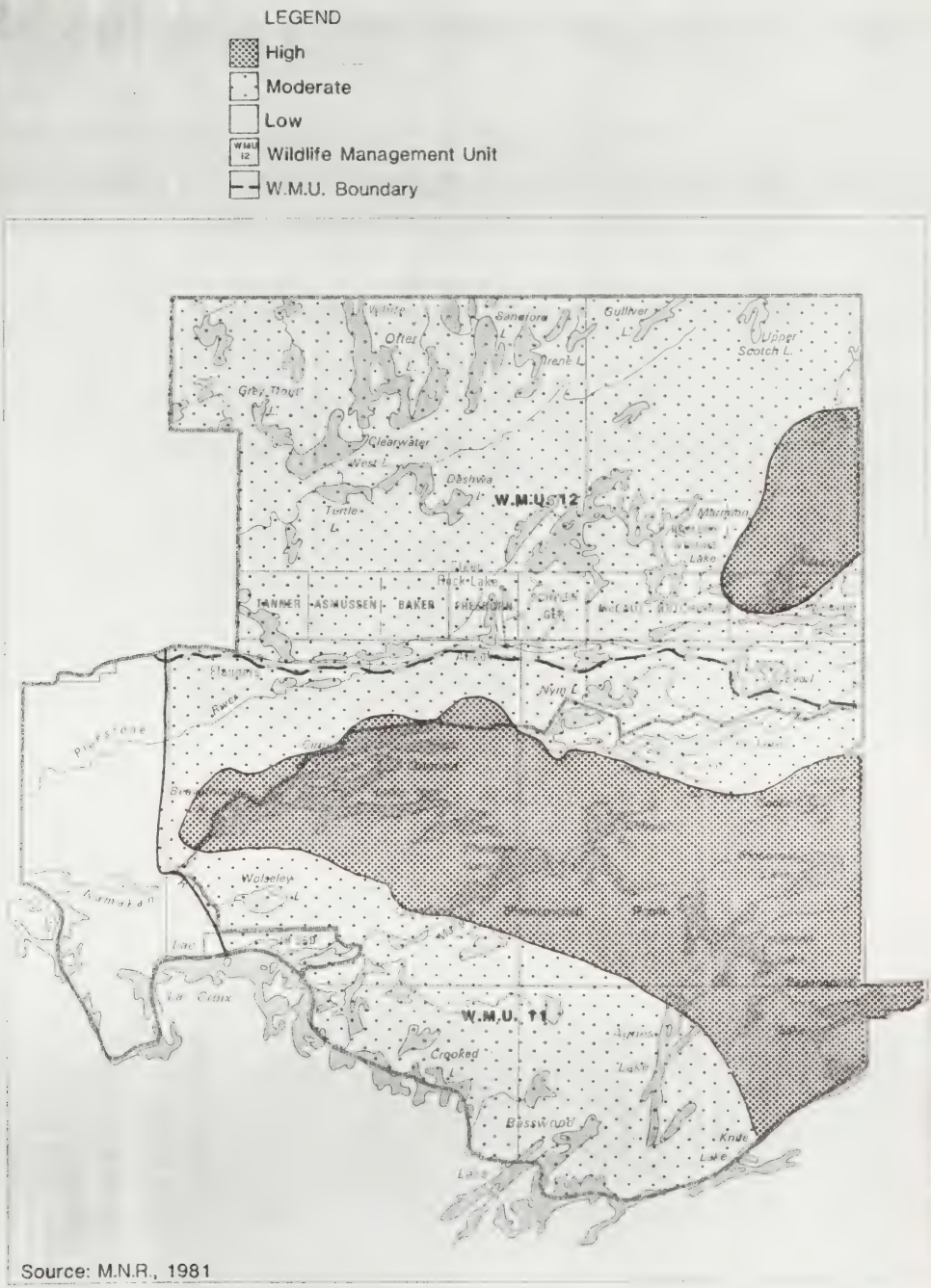
	Number of Hunters	Number of Animals Killed	Success %
Moose	1,021	256	25%
Deer	452	131	28%
Bear	103	65	63%

5. MOOSE

In 1979, 1,021 hunters spent 8,615 days hunting and harvested 256 moose.

Moose Density Areas

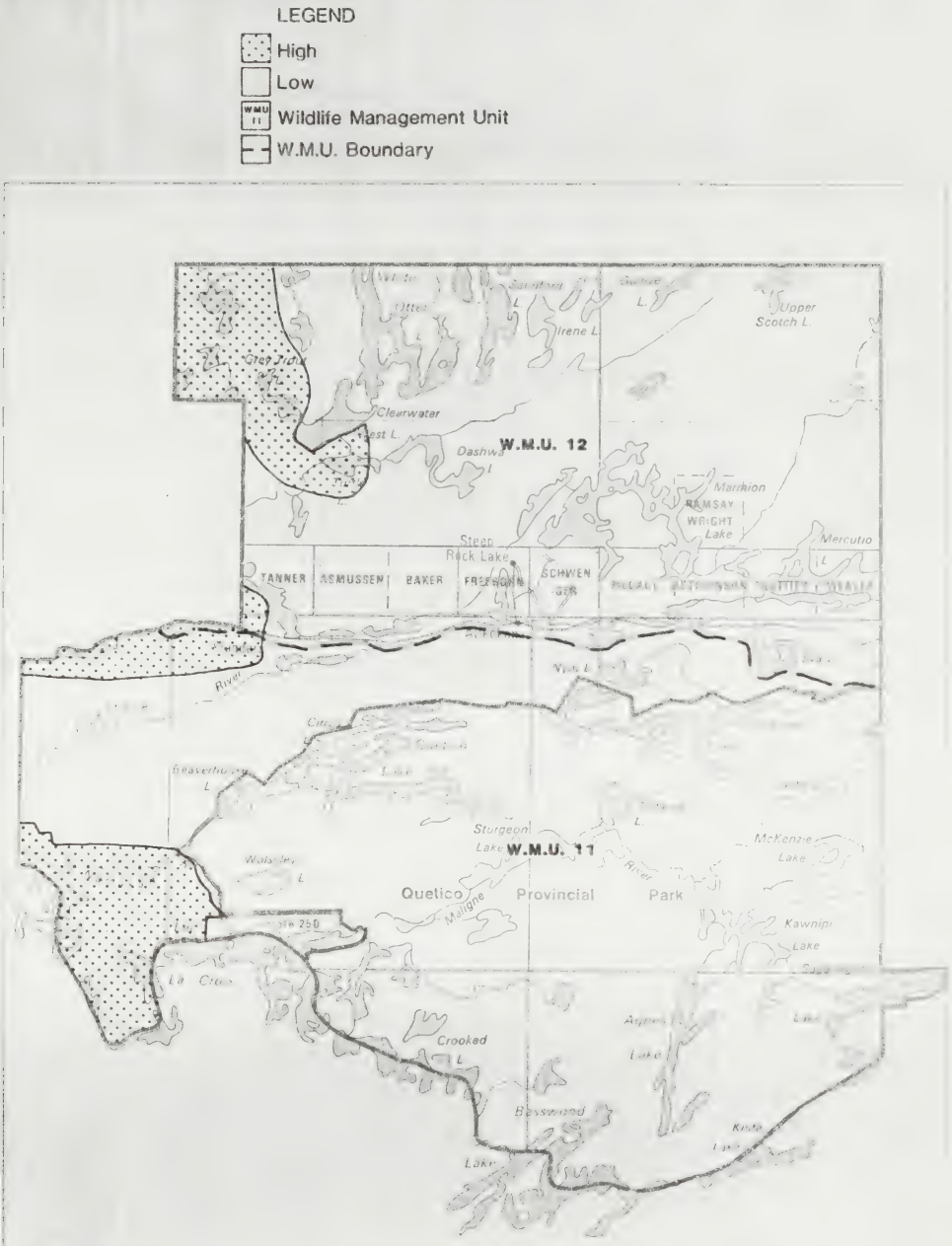
Figure 27



Source: M.N.R., 1981

Deer Density Areas

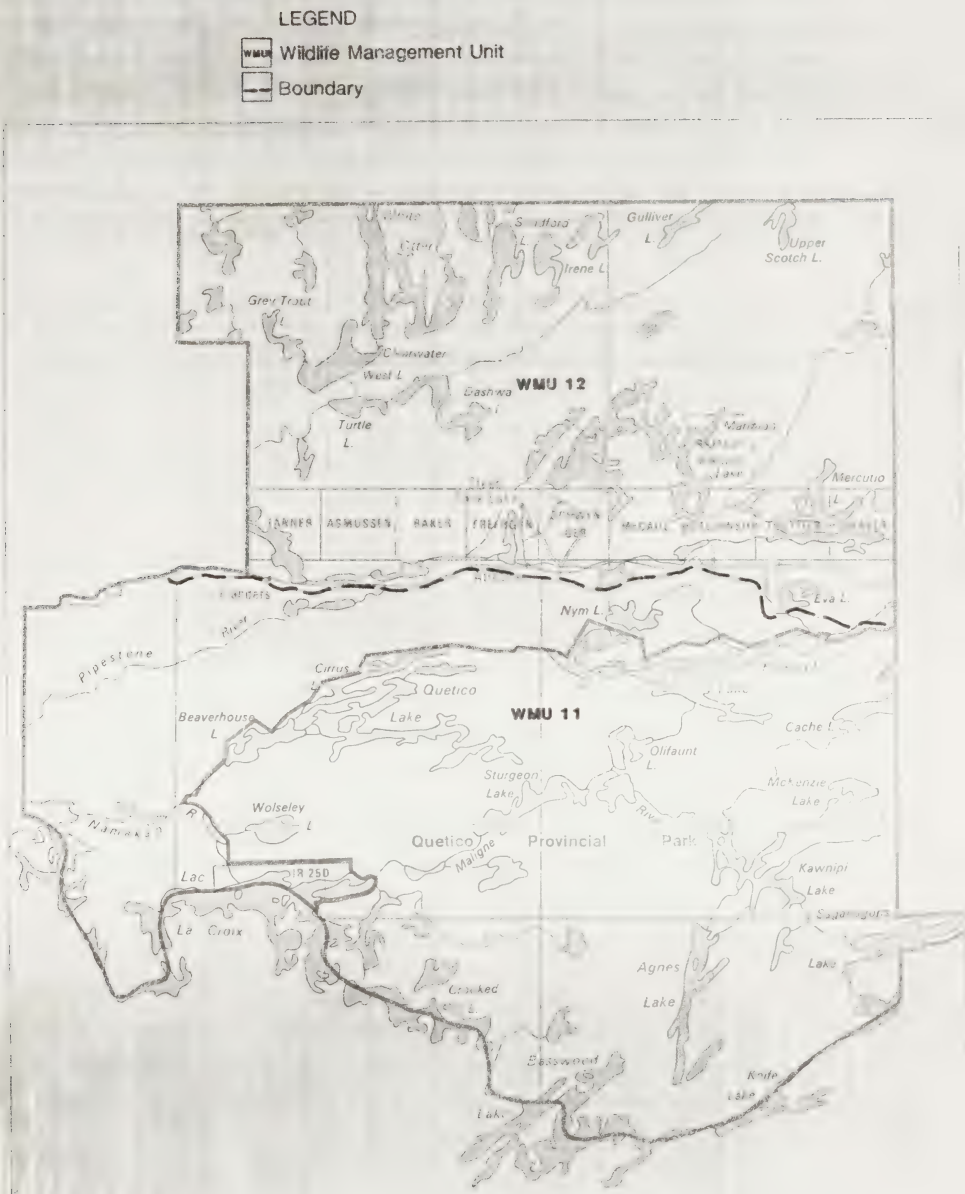
Figure 28



Source: M.N.R., 1981

Wildlife Management Units

Figure 29



Source: M.N.R., 1980

Moose hunting accounts for 69% of the total big game hunting days in the District. The success rate was 25%.

The 1980 aerial moose survey in wildlife management unit 11 estimated the moose population at 0.27 moose/square kilometre for a total moose population of 2,625 animals. Wildlife management unit 12 was surveyed in 1979 and the estimated population was 3,063 animals at a density of 0.29 per square kilometre. The total moose herd is estimated at 5,688 animals. Moose harvest information is available in District office files.

---

6. DEER

Deer hunting accounts for 24% of the total big game hunting days in the District. In 1979, 452 hunters spent 3,000 days to harvest 131 deer for a success rate of 28%. Most hunters are from Ontario. Non-residents must have a guide in the Rainy River Territorial District. An antlerless permit system was instituted in Ontario, in the fall of 1980 in an effort to control an overharvest of antlerless deer.

During the spring of 1981, a deer pellet group survey was carried out in wildlife management unit 11. This was the first survey of this type carried out in the Atikokan District. This survey enabled the District to estimate the deer population. Survey results indicate that there was a 1981 fall population of approximately 4,850 animals within the unit. The estimated population for unit 12 is 1,400 deer. But there is no reliable survey information to support this figure.

Because deer are sensitive to weather conditions, a cold winter with an extreme depth of snow would seriously reduce the size of the District's herd.

---

7. BEAR

There are nine known outfitters who cater to bear hunters in the Atikokan District. Of these, two are major outfitters; others will probably become involved as the economic advantages are realized.

As a result of the 1980 - 81 bear season there appears to be a trend towards an increased number of non-residents and annual kill (Table 9).

TABLE 9 BEAR HARVEST BY NON-RESIDENTS (FROM EXPORT PERMITS)

Wildlife Management Unit No.	1979	1980
11	11	20
12	52	81

Note The increase in bear harvest from 2979-80 by non-residents may be due to: 1. Increase in number of hunters.
2. Increase in efficiency in hunting methods.

8. RESOURCE AND USE ANALYSIS

Within Wildlife Management Units 11 and 12, the present estimated moose kill is slightly below the estimated annual allowable harvest. With new harvest restrictions, a sustained harvest can likely be achieved.

It would appear that, at present population levels, the deer harvest could be increased to meet the annual allowable harvest.

9. SMALL GAME AND MIGRATORY BIRDS

Most local people appear to hunt grouse and to a lesser degree varying hares. Most of the hunting is done along roads and trails and declines when the big game seasons open.

Migratory bird hunting is of minor importance because the Atikokan District is not located on a major migration corridor. There is some good duck hunting in the early part of the season up to mid-October. One of the favourite hunting areas is Lower Steep Rock Lake.

I:commercial fur

In 1978 - 79, the commercial fur harvest in the Atikokan District involved 93 trappers working 47 registered trap lines, many lines are trapped by more than one trapper. (Figure 30)

Nearly all trapping occurs on Crown land, with a small portion involving private lands, such as Ontario Hydro.

The fur harvest for 1978 - 79 season yielded $174,754, resulting in an average income of $1,879. per trapper. A breakdown of the species harvested and their value is as follows:

TABLE 10 FUR HARVEST - FALL OF 1978 - SPRING OF 1979

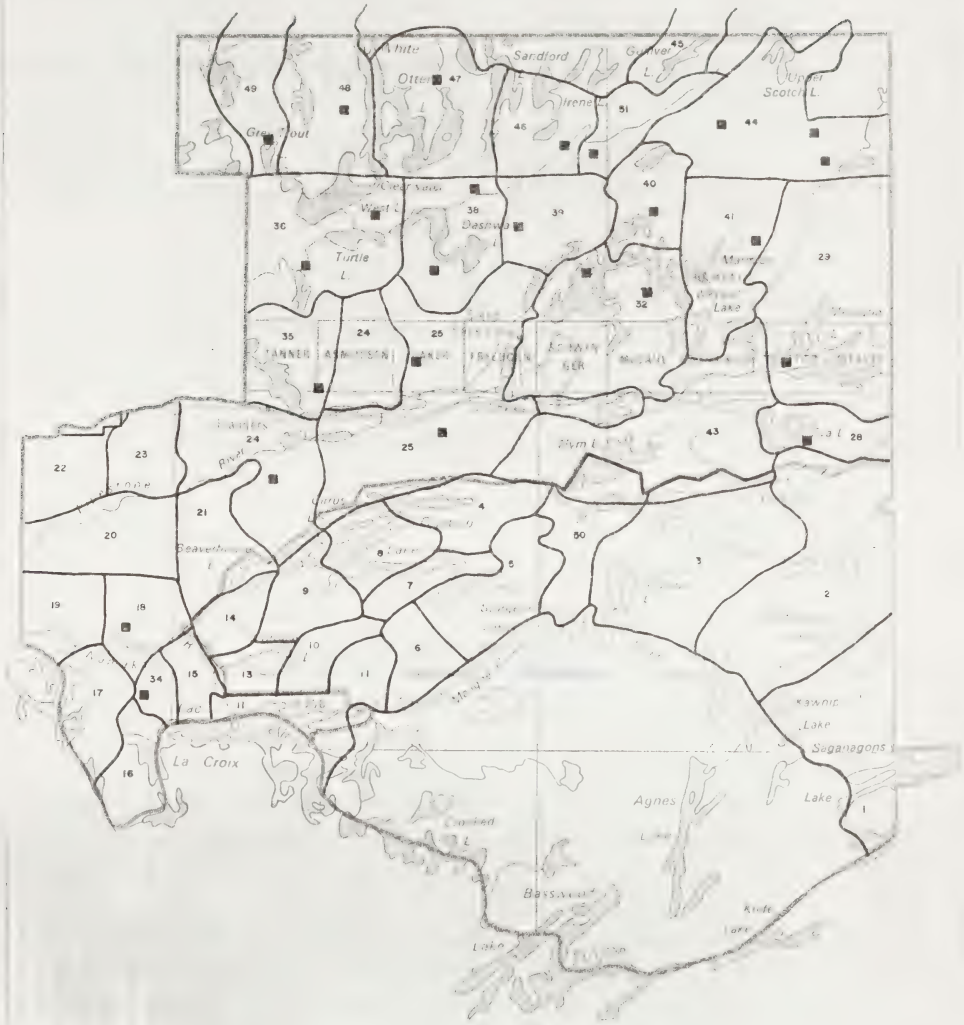
Species	Harvest	Total Value
Beaver	2,646	$96,844.
Mink	231	5,768.
Marten	1,057	31,763.
Otter	123	12,143.
Fisher	58	10,439.
Lynx	5	1,878.
Muskrat	521	3,673.
Others	158	12,246.
Total	4,799	$174,754.

Note (1) Ministry of Natural Resources
Atikokan District
Computer Printout 1978

LEGEND

23 Trapline Number

Trapline Cabin



Source: M.N.R., 1980

Beaver is the main species harvested and is managed under a quota system. The 1978 - 79 quota for the District was 4,514 beaver; 59% of this total was taken.

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1. RESOURCE AND USE ANALYSIS

With the available data, it is not possible to accurately determine if fur bearers are being over or under harvested.

Population levels are almost impossible to determine for most species. Beaver however, are easier to census, since their conspicuous lodges can be counted and evaluated (active or abandoned) by aerial surveys in the early fall. Using a known level of harvest (that the trapper can take 1.5 beaver per house on a sustained yield basis) quotas can be established.

A study of the trapping records for the last 7 years in the Atikokan District shows that most trappers harvest below their established beaver quotas. As more lines are surveyed, the harvest total could increase in the future. Although population levels cannot be established, it is likely that other fur bearers are being similarly underharvested.

J: recreation

Recreation is defined as any activity that individuals voluntarily engage in during their leisure time; their motivation is the personal satisfaction or the pleasure experienced before, during and after participation.

Outdoor recreation activities take place in a natural environment as opposed to a man-made one. The countless lakes and rivers in the planning area provide excellent opportunities for both summer and winter recreation activities. The increase of Crown land recreational

activities and the development of their related facilities have emerged simultaneously during the past six years.

Winter activities including snowmobiling and cross-country skiing increased significantly during this time; activities such as hiking and canoeing have increased steadily over a four year period. Nearly every outdoor activity and the amount of satisfaction obtained is directly influenced by the weather.

The climate in the Atikokan District poses minor restrictions to outdoor activities. Spring, fall and summer months usually extend over a seven month period, allowing for a variety of outdoor recreational activities. A five month period of winter with a substantial snow base, allows for winter activities such as snowmobiling, skiing and snowshoeing. Extremely cold weather restricts winter activities to some degree.

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1. PUBLIC RECREATION

A high proportion of both intensive and extensive recreation occurs in an unorganized manner on Crown land.

Intensive recreation usually requires a small area of land for many people. Cottaging, for example, is concentrated along lakes near both sides of Highway 11 and in the southwestern extremity of the District. These cottage areas coincide with many of the higher recreation capability areas identified on O.L.I. maps. (Figure 31)

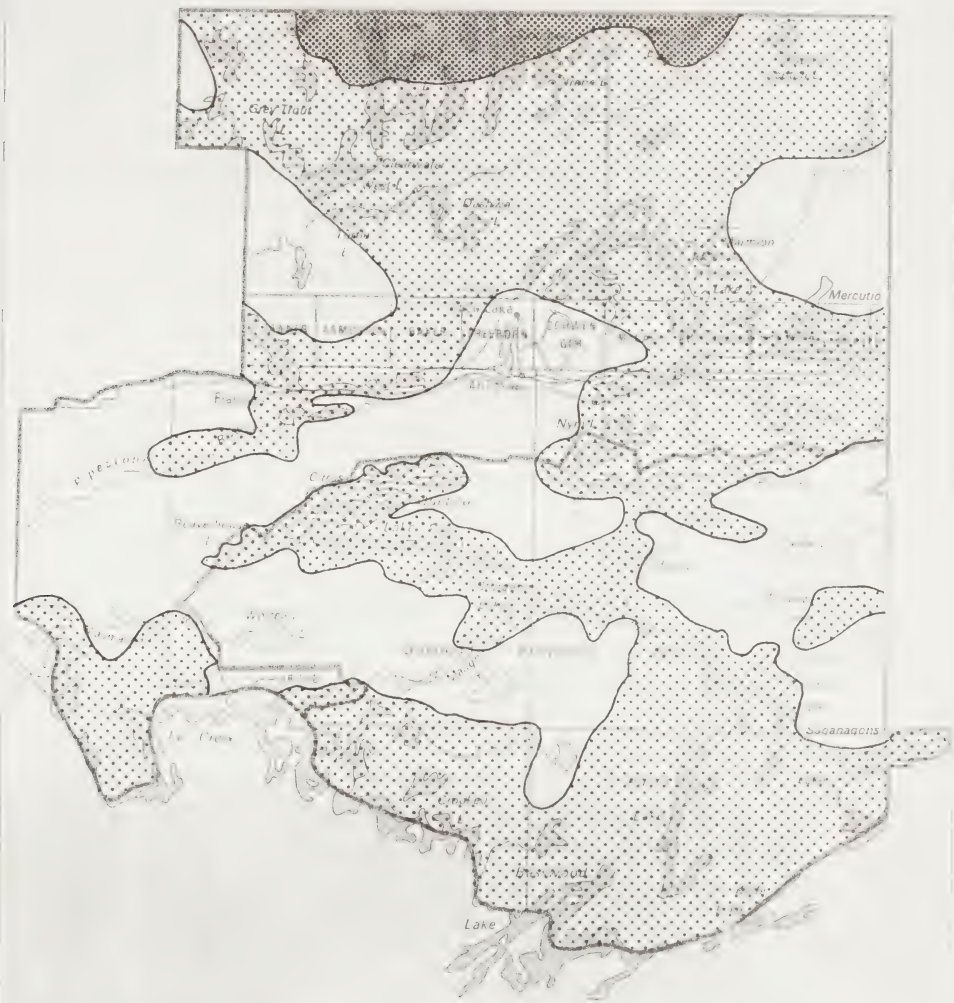
Some areas provide outstanding recreational opportunities for low intensity use. This scattered, infrequent use retains the quality of the experience and preserves the environment.

Quetico Park, with its canoeing and camping opportunities and historical boundary waters travel corridor is classed as a moderate to low recreational area according to O.L.I.

Extensive recreational activities associated with areas of moderate recreation capability, are used by a small number of people over a relatively large area. These activities usually spread out and include: hunting, fishing, hiking, canoeing, and cross-country skiing. They are facilitated by the maintenance of access points, canoe routes and bush

LEGEND

- High
- Moderate
- Low



Source: O.L.I., 1975

and snowmobile trails.

Camping on Crown land is dispersed throughout the District. However, concentrations of campers are found along access roads at or near access points, where water based activities are easily carried out. There are 23 recognized camping areas allowing for approximately 274 campsites. Camping facilities such as tables or fire grills are not supplied at any of these sites. Some access points are posted against camping due to a lack of space and conflict with nearby commercial facilities. (Figure 32).

a. Canoeing

There are excellent canoeing opportunities outside Quetico Park with 10 official canoe routes covering 1,062 kilometres.

(i) Resource and Use Analysis The Ministry has completed its expansion program for canoe routes outside Quetico. There will be no new canoe route development because there are very few potential routes left.

This does not present a problem, however, since interest in canoeing outside of Quetico is just beginning, with most routes receiving a small fraction of the use they can sustain. Problems are not anticipated in meeting the demand for many years.

b. Boating

(i) Resource and Use Analysis "Boat routes" as such have not been established in the Atikokan District because of a lack of large accessible bodies of water or interconnected lakes suitable for boat travel (ie. without manual portages). The District does have over 244,000 hectares of water, and much of it is accessible on a lake by lake basis, so there are ample opportunities to enjoy recreational boating on a day use or boating/camping basis. It should be remembered that motor powered watercraft are not permitted in Quetico Park.

c. Trails

The outdoor recreation trails program includes summer hiking trails and winter cross-country ski and snowmobile trails. Multiple use trails total 95 kilometres with cross-crountry ski trails totalling 32 kilometres. The seven trails within the District have been built and maintained by the Ministry. Occasionally the local snowmobile club assists with the grooming of some of the trails.

(i) Resource and Use Analysis There is one hiking trail which currently receives a moderate amount of summer use, mostly by local residents. It is located within a few miles of the town site, and is able to meet the current demand. The capacity for expansion of hiking

trails exists, but until the demand increases, the construction of additional trails is unlikely. Hiking trails may see minor growth if cross-country ski trails are built through terrain which allows summer use.

Snowmobile trails are often used by cross-country skiers. Peak use of trails by snowmobilers occurred in 1977 with most trails being heavily used even in the coldest weather. Use has declined noticeably due to the decrease in popularity of the sport, the decline in the town's population, and the increase in the price of gasoline.

Use of cross-country ski trails increased during the period that snowmobile use declined.

The existing trail network is meeting the demand for snowmobile routes around Atikokan. A significant amount of recreational snowmobiling occurs on lakes and old road systems, away from organized trails and structured group activities, and often it is secondary to another recreational pursuit, such as ice fishing. The network of snowmobile trails could be expanded, but will likely not grow significantly in the next few years, as long as the existing trail network meets the demand.

Currently, the trail network is not overused, and it should continue to satisfy the demand of local skiers. The number of kilometres of ski trails could be greatly increased if an increase in skiing activity made this necessary; however, the first step would probably be to upgrade the existing trails and accommodate some of the demand that way.

d. Parks

Provincial parks represent significant natural, cultural and recreational environments dedicated for all time to the people of Ontario and others who may use them, for their healthful enjoyment and appreciation; more specifically, provincial parks are intended to:

- protect provincially significant elements of the natural and cultural landscape of Ontario (protective role)
- provide a wide variety of outdoor recreation opportunities ranging from "high intensity day use" to "low intensity wilderness experiences" (recreational role)
- provide opportunities for exploration and appreciation of the outdoor, natural and cultural heritage of Ontario (heritage appreciation role)

- facilitate travel by residents of and to Ontario who are discovering and experiencing the distinctive regions of the province (tourism role)

Because one park cannot serve all of these purposes at the same time; six broad classes of provincial park have been established:

Wilderness Parks: Wilderness parks are substantial areas where the forces of nature are permitted to function freely and where visitors travel by non-mechanical means and experience expansive solitude, challenge, and personal integration with nature.

Nature Reserves: Nature reserves are areas selected to represent distinctive natural habitats and landforms of the Province, and are protected for educational purposes and as gene pools for research to benefit present and future generations.

Historical Parks: Historical Parks are areas selected to represent the distinctive historical resources of the Province in open space settings, and are protected for interpretive, educational and research purposes.

Natural Environment Parks: Natural Environment Parks incorporate outstanding recreational landscapes with representative natural features and historical resources to provide high quality recreational and educational experiences.

Waterway Parks: Waterway parks incorporate outstanding recreational water routes with representative natural features and historical resources to provide high quality recreational and educational experiences.

Recreation Parks: Recreation parks are areas which support a wide variety of outdoor recreational opportunities for large numbers of people in attractive surroundings.

(i) Development The District has one provincial wilderness park, Quetico, and one park reserve, White Otter Lake. Quetico was originally established as a forest reserve in 1909. In November 1913, the reserve was given park status and set aside as a public park for the people of Ontario.

In 1973, Quetico Park was reclassified as a wilderness park, thereby

preserving an area of unique natural and historical significance. Recreational opportunities include canoeing, camping, fishing, snowshoeing, backpacking, and photography. The park encompasses 475,783 hectares and is located 160 kilometres west of Thunder Bay. The only designated campground, located at French Lake in the northeast corner of the Park, contains 97 campsites and 37 tent and house trailer sites. Revenues are shown on Table 11.

The Park is managed and operated under the direction of an approved master plan.

White Otter Lake became a park reserve in June 1968. It is located in the northwest portion of the District and covers 242 square kilometres or 24,281 hectares. A key feature included with the outstanding natural features of the reserve, is the now derelict structure of a log castle located in the north end of the reserve. The castle was built by a local trapper in the early 1900's. Access to the park reserve is by boat or aircraft. There is an abandoned logging road accessing Ann Bay in the southeast corner of the reserve, however, the road is in poor condition and is barely passable.

Several candidate park areas have been identified in the North Central Region and are being reviewed by the Minister, as part of the whole provincial park systems plan. Upon approval, candidate areas will be identified in the preparation of optional District Land Use Plans. One of these areas is the Turtle River-White Otter Candidate Waterway Park. This candidate park is in the Atikokan District and includes parts of Pekagoning and Dibble Lakes.

TABLE 11 QUETICO PARK USES AND REVENUE

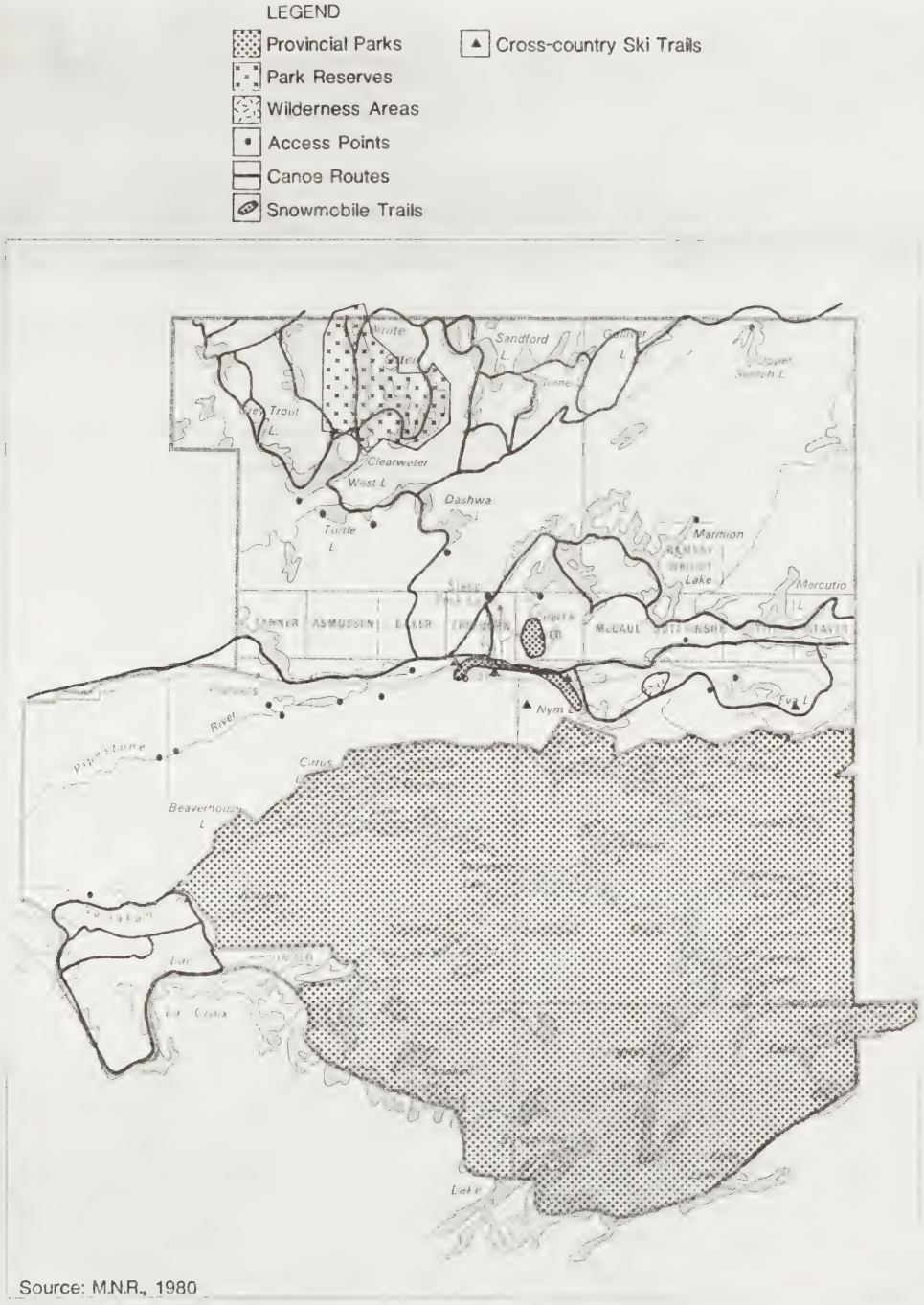
		1975	1976	1977	1978	1979	1980
Park Interior	Day Use	11,737	10,217	11,638	10,496	4,424	4,100
User Days	Campers	24,860	25,678	23,216	23,462	20,824	20,100
	Totals	36,597	35,895	34,874	33,952	24,131	24,200
Park Campground	Day Use	12,936	18,650	16,079	12,059	2,375	1,300
User Days	Campers	15,953	11,183	12,776	7,511	6,825	5,300
	Totals	28,899	29,834	28,855	19,570	9,200	6,600
Total Revenue $ of Park		241,230	249,230	234,148	317,478	310,217	210,300

2. PRIVATE RECREATION

"Summer cottages" are an important recreational outlet for many people in the Atikokan District. Most of the lots have been allocated by the Crown on a number of lakes in the District, although four private developments have occurred.

The four recreational developments within the private sector are:

- The Eva Lake development that originated by subdividing a mining claim into 73 lots.
- The Finlayson Lake development where about 10 individual lots will be leased on private land, (proposal only).
- The Nydia Lake development, where the Canadian National Railway has 13 cottage lots leased on their Abiwin station property.
- The Reserve Bay development that originated by subdividing several mining claims into 20 lots.



Source: M.N.R., 1980

a. Current Level of Development

The total number of cottage sites in the District is 438, including individual locations and multi-lot subdivisions. Of the 438 cottages, 371 are located on patented lands; the other 67 are on lands leased from the Crown.

There are several cottaging areas along both sides of Highway 11 on large accessible lakes and in the southwestern section of the District along the United States boundary waters. Eva, Nym, Crystal and Sandpoint Lakes are examples of lakes with intensive developments with many cottages converted to permanent residences. (Figure 33)

Cottaging generates approximately 87,600 user days per year, assuming 200 user days per cottage per year.

The Ministry has undertaken a lake planning program, providing Crown land to the public for the purpose of cottage development. Since 1976, 105 Crown cottage lots have been leased. Crooked Pine Lake will have 79 lots available pending approval of the Lake Development Plan. Calm Lake has 27 lots which are available if increased demand occurs in the future. A new Crown Land disposition policy permits the sale of Crown cottage lots and conversion from lease to patent of existing lots.

Associated with cottage development, the Ministry of Natural Resources has issued land use permits for; 8 boathouse sites, 1 dock site and 4 boathouse and docks on recreational lakes within the District.

In the past, land use permits were issued for hunt and fish camps. These renewable one year permits permit the holder to construct camps or cabins on 0.2 hectare sites. Some camps were used as seasonal cottages, but most were used only during the hunting season. To replace the hunt and fish camps, a remote cottaging program has been introduced. This program provides a frontier type of cottaging experience with outhouse and water pail facilities only. Currently there are 17 remote sites in the District, of which 16 have been developed.

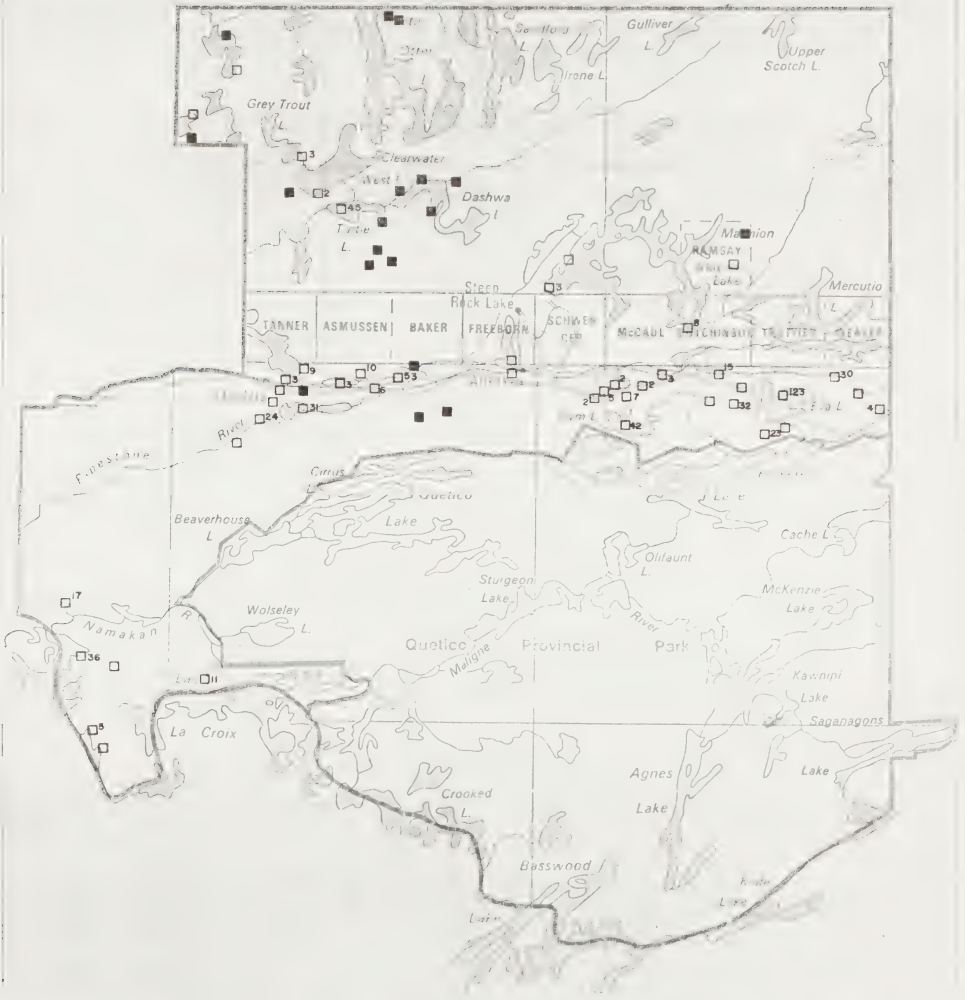
b. Resource and Use Analysis

From 1974 until 1980 the Atikokan District has made available 263 lots through lake development plans. The ability to meet the District's future cottage lot quota will be affected by such factors as: water quality, sensitive areas, access and distance from urban centres.

LEGEND

□2 Cottage (Number indicates if more than one)

■ Remote Cottage



Source: M.N.R., 1980

3. TOURISM

Tourism in the Atikokan District includes: hunting, fishing, canoeing, individuals and groups seeking a wilderness experience, shopping and family recreation. Motels and hotels rely on the commercial tourism sector for most of their clientele. The Atikokan area, with its many lakes, streams and rocky, forested terrain, is attractive to tourists interested in activities such as photography, hiking, wildlife viewing, swimming and site-seeing.

Commercial recreation development coincided with the completion of the eastern portion of Highway 11 in 1954, linking Atikokan to Thunder Bay. One of the earliest establishments was located 17 kilometres east of Atikokan, on Niobe Lake, adjacent to the highway.

In the northern section of the District, commercial accommodation is mainly in the form of outpost camps and main lodges. There are 41 commercial outpost camps located throughout the District. The majority of these operations began between 1960 - 1975.

Commercial recreation includes those facilities which are privately owned and operated, that offer a variety of recreational activities for a fee. Commercial recreation includes lodges, resorts, campgrounds, youth and church camps, outpost camps, hotels, motels, ski hills, golf courses and riding stables. Located within the town of Atikokan is one ski hill and one golf course; a single municipal campground, (Bunnell Park), has a capability of 20 campsites and 20 trailer pull-throughs with electrical hookups operated by the Township of Atikokan.

There are 23 commercial tourist resorts and outfitters in the District. Of these, 17 provide accommodations. Also, 10 of the commercial operators provide tent and trailer camping, with a total of 158 campsites. (Figure 34)

In the past, the Ministry of Natural Resources has made land available for commercial purposes and, in certain situations, will permit more use of Crown land for commercial purposes.

a. Resource and Use Analysis

The tourist industry has greatly increased in scope and importance since the closing of the mines in the Atikokan area and is now second only to the forestry and forest products industry as an employer. An aggressive and effective tourism enhancement program being coordinated by local

outfitters and the town will further increase the importance of the tourist industry. Presently, most tourists come from the population centres of the midwestern United States. A large population base is not necessary to support a major tourist industry. As noted above, the positive and progressive attitude of the community and its' leaders, and support from the provincial government such as the Ministries of Tourism and Recreation, Northern Affairs and Natural Resources will undoubtedly make Atikokan a major northwestern Ontario tourist centre.

Quetico Provincial Park is a wilderness park that provides unparalleled family canoeing opportunities from anywhere in Canada with its unique myriad of interconnected lakes and streams it is a major attraction for the Atikokan area and contributes significantly to the inflow of tourists dollars.

A Strategy and Action Plan for Tourism in the Atikokan area was produced in 1979 for Atikokan by the consulting firm of Balmer, Crapo and Associates. The data and suggested courses of action detailed in the plan will assist the growth of tourism in the area.

A:fire

Wild fires are common throughout northern Ontario. Based on a 50 year average, the Atikokan District can expect about 35 wild fires per year. (Figure 35)

During a ten year period between 1973 - 1982 there were 483 fires, which burned 10,107 hectares. Sixty-four percent of the fires were caused by man.

B:sensitive areas

Sensitive areas are areas that contain valued features that should be preserved. A feature may be biological, geological, historical and cultural or a mixture of all or any combination. Sensitive areas may also be aesthetically pleasing with no special scientific or educational value. Sensitive areas include rock paintings, great blue heron breeding colonies, bald eagle and osprey nests, unusual plant communities or areas of unique visual significance. (Figure 36)

Numerous sensitive areas in the Atikokan District have been recorded; these records are kept in the District office. The Ministry of Natural Resources policy will ensure that sensitive areas are considered in the planning process. Care will be taken to ensure that the use of any of the sensitive sites is not detrimental to them.

c:earth and life science features

Several significant features have been identified in the Atikokan District by the Earth and Life Science Inventory Program. (Figure 36) The purpose of the program is to locate geological, floral and faunal features throughout the province and assess their significance within the District, Region and Province. The identified sites are then considered during the District land use planning exercise. Their value as a representative feature is assessed and they may then be given special designation (park reserve, sensitive area, etc.). This procedure is necessary to protect the sites before resource use occurs in the area. Identified sites with Life Science features are:

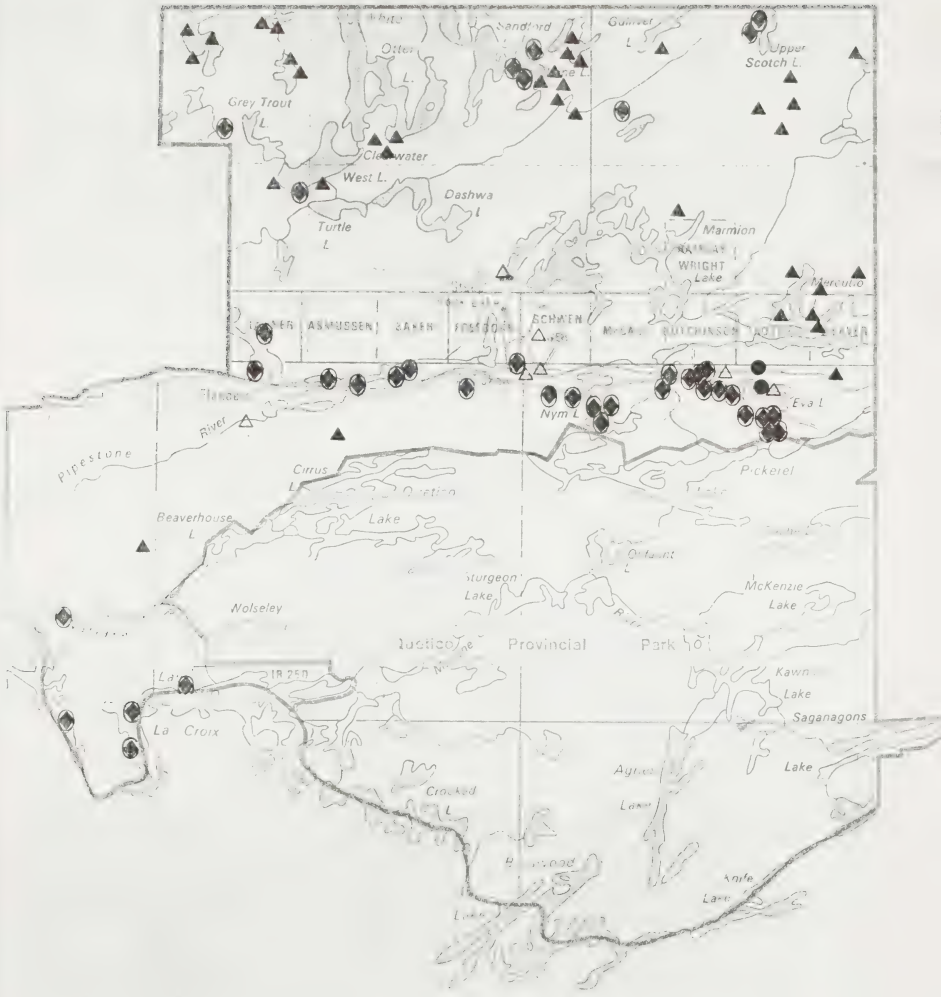
1. Long Muddy Lake - dune peatland
2. Warner Lake - Largetooth Aspen/Red Maple stand
3. Ann Bay (White Otter Lake) - Jack Pine stand
   - White Pine/White Birch
   - Birch, Pine, Spruce, Fir
   - Spruce, Sedge, Sphagnum
4. White Otter Lake - Red Pine stand
5. Namakan Lake - Ironwood stand
6. Beatty Portage location - Red and Bur Oak stands

Earth Science features include:

1. Warner Lake - Quetico Belt Bedrock
2. White Otter Lake - various surficial features

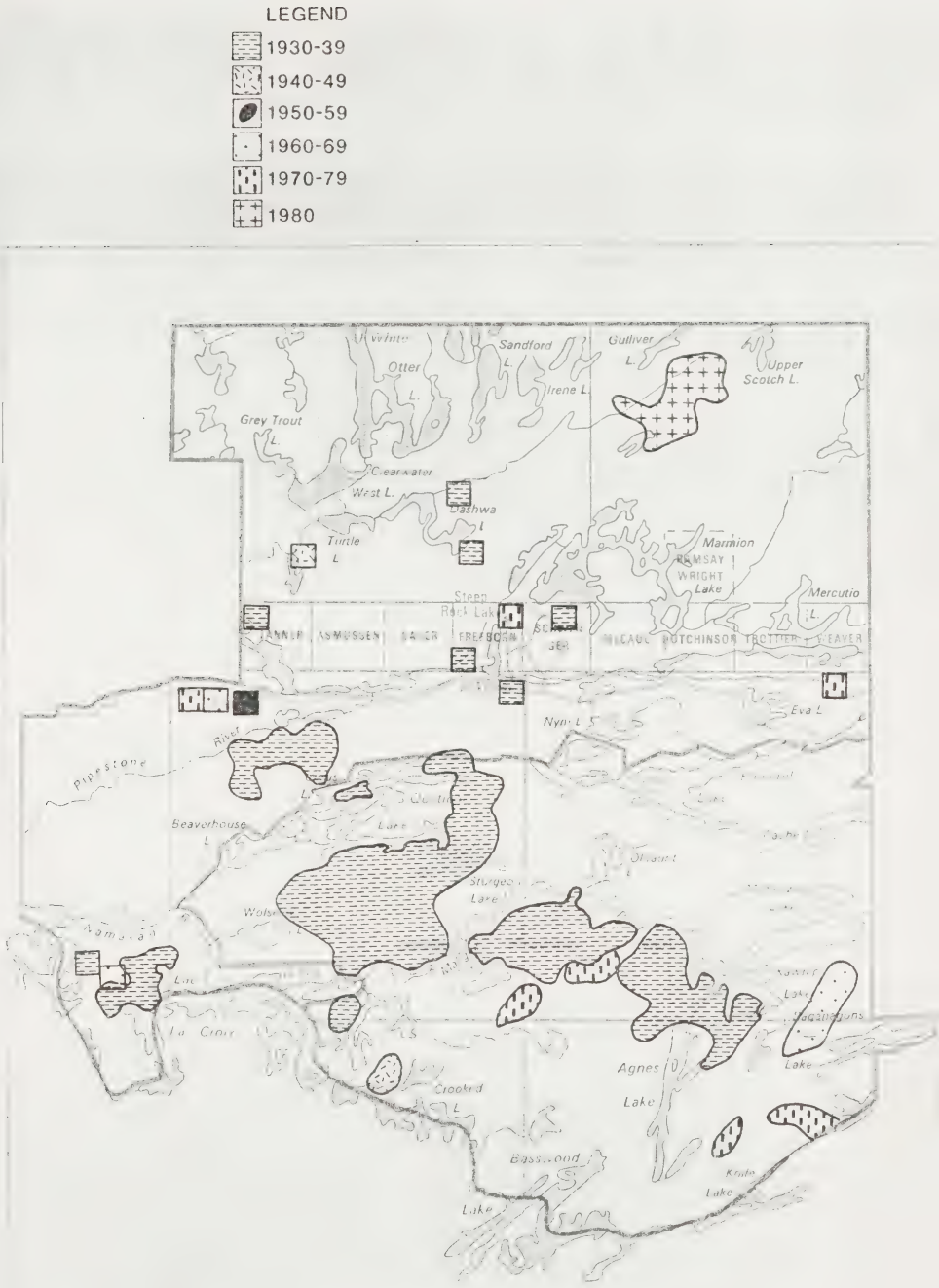
LEGEND

- Commercial Lodges
- Outpost Camp
- Private Recreational Development
- Education Facility



Source: M.N.R., 1980

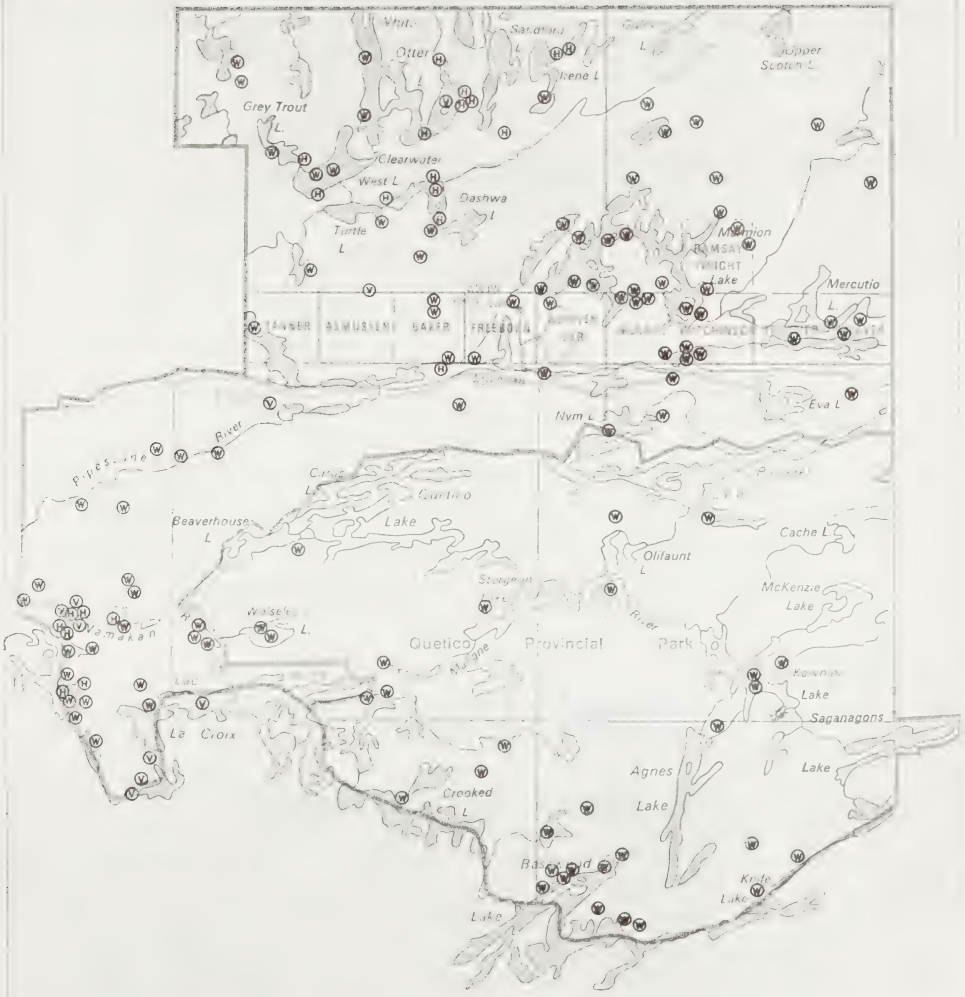
Fire History



Source: M.N.R., 1980

LEGEND

- (V) Vegetation
- (W) Fish and Wildlife
- (H) Historic and Cultural



Source: M.N.R., 1980 and Ministry of Culture and Recreation, 1980

D:hazard lands

Hazard lands which because of physical characteristics and/or location in combination with certain other natural and/or artificial phenomena increase the risk of loss of life or significant property damage when developed.

The Ministry of Natural Resources hazard lands policy states land use planning and development control for hazardous lands are the most effective means to:

1. prevent loss of life
2. minimize property damage, and
3. minimize social disruption.

There are few hazard lands in the planning area. There is a flood plain hazard associated with the Atikokan River. Little damage results from flooding except where urban development occurs along the river's flood plain. The Township of Atikokan will be encouraged to identify accurately the limit of flood prone land along the Atikokan River.

E:recreational land use planning zones

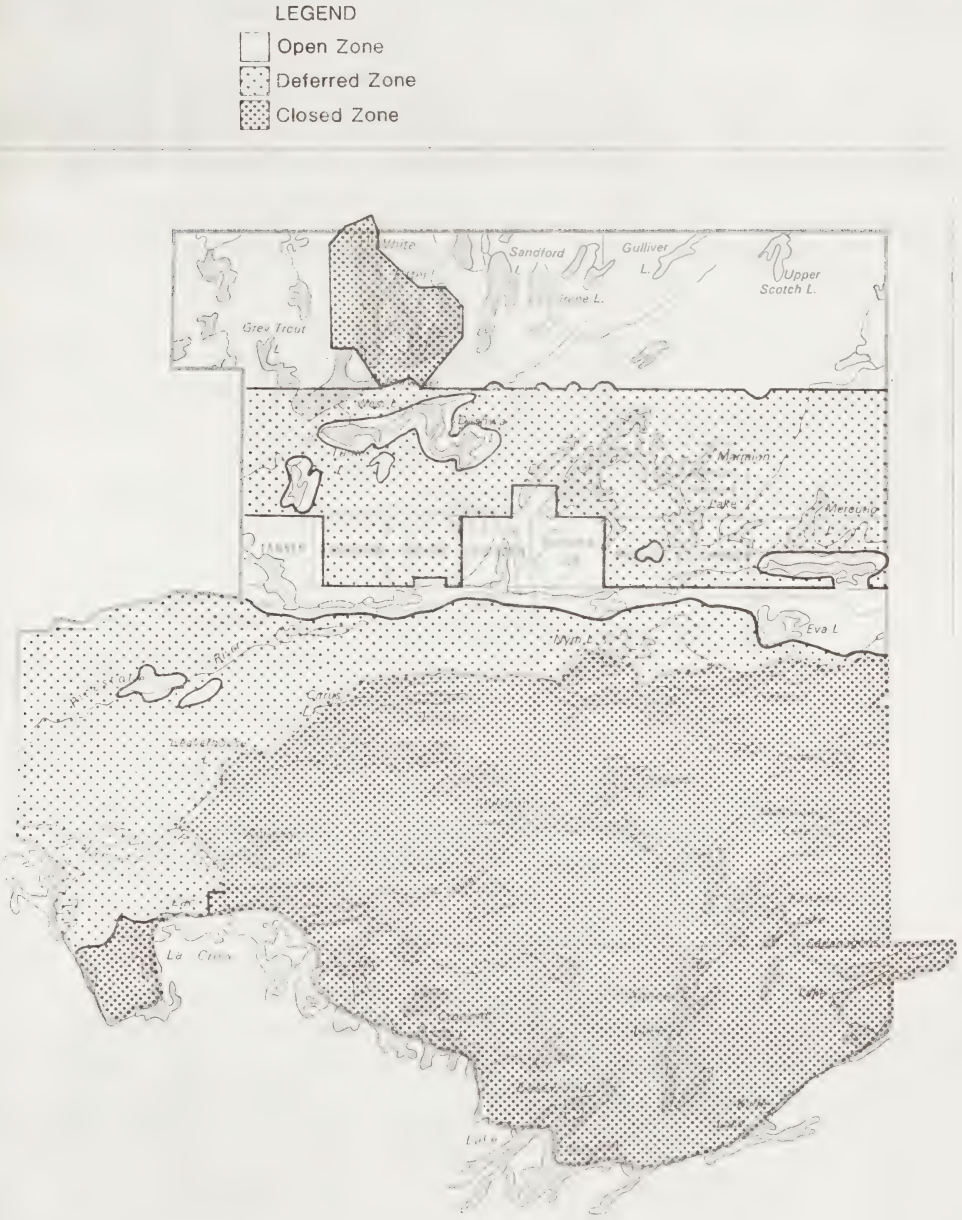
Figure 37 shows the recreational land use planning zones in the Atikokan District. Open zones permit disposition under existing policies as set out under The Public Lands Act and Regulations. Deferred zones require a Land Use Plan to determine future permitted uses. Areas closed to

disposition include Provincial Parks and park reserves.

These planning zones will be discarded when the District Land Use Plan is implemented.

Recreational Land Use Zones

Figure 37



Source: M.N.R., 1980

V OTHER AGENCY PLANS AND PROGRAMS

Ministry plans and programs are affected by the programs of other agencies.

Most of these programs are of a permanent nature involving large parcels of land. The following are examples:

1. MUNICIPAL

By-Law 35 of the Municipal Planning Act controls use of all lands within the boundaries of the 372 square kilometres that form the Township of Atikokan. Approved in 1977, this By-Law defines the specific zoning in the Township and the permitted uses in each zone. An Official Township Plan was approved February 20, 1979.

2. ATOMIC ENERGY OF CANADA LIMITED

In 1979, a geological research survey began 19 kilometres northwest of the Township of Atikokan. Rock samples are being collected by drilling to assess the suitability of this area to store nuclear waste.

3. BENDING LAKE ROAD

In 1978, the Ministry of Transportation and Communications began the construction of a road that will link Atikokan to Highway #17. The completion date is scheduled for approximately 1990. The road will provide access to timber areas and the ore bodies at Bending Lake as well as an alternate route to Highway 17.

4. ATIKOKAN GENERATING STATION

A fossil-fuelled generating station is now under construction 11 kilometres northeast of Atikokan. The 200 megawatt single unit station is being built by Ontario Hydro for future electrical power demands. It is scheduled for completion in 1984, with an economic lifetime of 30 years.

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5. BALMER, CRAPO AND ASSOCIATES INC. OF RECREATION/TOURISM RESEARCH, PLANNING AND MANAGEMENT

The consulting firm was commissioned by the Township of Atikokan under the sponsorship of the Ontario Ministry of Northern Affairs to submit a "Strategy and Action Plan for Tourism in the Atikokan area". This report was completed in December 1979.

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6. CONTAMINANT MONITORING

With the construction of the coal fired Atikokan Generating Station by Ontario Hydro near Atikokan, study sites throughout the District have been established to measure contaminant levels (prior to plant start up). Acid rain data will be obtained through the program being jointly carried out by the Ministry of the Environment, Ontario Hydro and Ministry of Natural Resources. The results will assist in evaluating the impact of acid rain.

The Ministry of the Environment publication - *The Case Against Acid Rain* - a report on acidic precipitation and Ontario's Program for remedial action, outlines the problem on a provincial basis and presents solutions.

VI PROBLEMS AND ISSUES

Certain problems and issues are apparent within the District.

Identification of problems and issues is difficult and the following is not an exhaustive list. Other issues will likely arise during the public participation part of the planning exercise and during detailed in-house reviews.

Some of the issues are of immediate local concern, and others are of a more concern provincially, nationally, and with acid rain, internationally.

Solutions to the identified problem are not given. A change in approach to a given issue may result after studies are complete. No priority has been given to the identified problem or issue.

1. CROWN LAND CAMPING

This type of land use is a concern of the Ministry of Natural Resources and also local residents and tourist operators because Crown land campers use many of the resources but contribute little to the local economy. As of February 1983, a Crown Land Recreation Policy is being developed for implementation in 1984. The policy will control the indiscriminate use of Crown land in the Atikokan District.

2. LOGGING ROADS

Logging roads will access nearly all of the District within the next ten years. Management of other resources (lake trout, moose) is a concern of the Ministry of Natural Resources. Access to formerly remote lakes is a concern of the tourist industry. With roads come Crown land campers and the need to provide garbage, camping and boat launching facilities.

3. BIG GAME PRODUCTION AND LOGGING

Big game production can be greatly affected by logging practises. Logging practises that create openings while retaining cover are beneficial to game. Clear cuts that remove all cover are deleterious to wildlife.

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4. WATER LEVEL

Sudden and extreme level changes on the Seine River System concern Ministry of Natural Resources fishery managers because of the possible detrimental impact on fish reproduction. In turn, they probably have a negative effect on tourist outfitters and sportsmen.

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5. TOURISM

With the loss of the local iron mines (Steep Rock and Caland) Atikokan's economic base declined. Efforts are being made to increase tourism in the area to offset the economic impact of the mine closures.

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6. THE ATIKOKAN GENERATING STATION

Although providing jobs and income for the town there is concern by the public that acid rain and higher water temperatures will result, and affect plants and animals.

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7. LAKE TROUT

The Atikokan District has 166 lakes that contain lake trout. This species requires special management which can affect other resource utilization activities such as cottaging, tourism and logging.

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8. FIBRE AND SAWLOG PRODUCTION

Current demand for jack pine and spruce appear to exceed the available supply.

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9. NON-RESIDENTS

Non-residents are a major source of tourism revenue which must be

realized on a local level. In return for the use of area resources, an economic return is expected.

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10. BENDING LAKE ROAD

The Road will open up the previously inaccessible northwest corner of the District. Careful planning along the road corridors will be required to ensure adequate protection for lake trout waters and the development of private and commercial recreation facilities.

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11. FOREST UTILIZATION

Present cutting operations are exceeding regeneration operations. The Ministry of Natural Resources presently carries out all regeneration work in the District.

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12. THE ATOMIC ENERGY OF CANADA LIMITED TEST DRILLING SITE

The possibility of storing nuclear waste within the District has caused concern among local people.

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13. SHORELINE RESERVATIONS

These tie up a considerable amount of timber. They are desirable from a recreational point of view, but result in less wood fibre available to logging companies.

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14. MINING ACTIVITIES

Conflicts occur when claim posts, survey and grid lines on mining claims are obliterated by logging activities.

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15. LOSS OF FOREST PRODUCTION LAND

Losses to other uses such as roads, powerlines, etc., reduce future wood fibre availability.

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16. ACID RAIN

Acid rain is a major problem in North America. It is mainly caused by

emissions from automobiles and also factories that burn coal. Acid rain evolves through a four stage cycle - sulphur and nitrogen emissions, long range atmospheric transport, transportation of chemical compounds and fallout to earth through precipitation or dry deposition. The sulphur and nitrogen pollutants can move thousands of kilometres. The acids come to earth as acidified rain or snow or as dry particulates or gases. The chief concern about acid rain is that it affects aquatic life in lakes and watersheds. Lakes and streams in these areas have very little buffering (neutralizing) capability. They could become so acidic that they no longer support fish and other aquatic life. Also, acidification can retard fish reproduction. It has also been shown that acid rain reduces forest and crop growth.

The District's geology is basically granitic and most of the lakes are deep, clear and cold and extremely vulnerable to acidification.

GLOSSARY

Allowable Cut	The calculated amount of timber that can be harvested annually under sustained yield management.
Capability	The natural ability of an area to provide continuous opportunity for benefits under an assumed level of management.
Capacity	The upper limit to which an area of land, or water, may be used or developed without an undesirable change taking place in the environment. Also called carrying capacity.
Coarse Fish	Species of fish which are generally not pursued by anglers such as; suckers, burbot and chub.
Crown Land	Any lands vested to Her Majesty in Right of Ontario, whether or not covered with water, commonly referred to as public land.
Crown Lease	A grant of leasehold rights on a parcel of Crown Land for a specific purpose over a specified period of time which is generally longer than would be the case with a land use permit.
Forest Management	The practical application of the scientific, technical and economic principles of forestry.
Game Fish	Those top predator species usually pursued by anglers such as pickerel, pike and trout.
Greenstone	Any of numerous, usually altered, dark green compact rocks which are generally indicative of high mineral potential areas.
Intrusive	Having penetrated while fluid, into or between other rocks, but solidifying before reaching the surface.
Land Use	The human use of the planning area. This may vary from very intensive use in the urban areas to very extensive use in wildland areas.
Land Use Permit	A document, with an attached annual fee, permitting occupation of public land for a period not exceeding one year.
Management Plan	The means by which forest policy, aims and objectives are translated into a continuity of specific treatments for a particular forest area.
Management Unit	A forest area under one ownership or assigned rights

	to the timber thereon, organized for efficient administration and control and operated according to one management plan.
Massive	Of homogenous structure, without stratification, flowbanding, foliation, schistosity, and the like.
Mesotrophic	Of intermediate fertility and productivity.
Metamorphic Rock	Rock which has formed in the solid state in response to pronounced changes of temperature, pressure, and chemical environment.
Metasedimentary Rock	Partly metamorphosed sedimentary rock.
Metavolcanic Rock	Partly metamorphosed volcanic rock.
Objective	A quantifiable end result to be achieved.
Oligotrophic	Of very low fertility and productivity.
Patent Lands	Land transferred from Her Majesty in the Right of Ontario to an individual, company, or corporation in perpetuity.
Policy	The decision concerning the objectives to be achieved and the means of achieving them. For land use planning we are mainly concerned with the objectives and targets.
Protection Forest	An area wholly or partially covered with woody growth, managed primarily to regulate stream flow, prevent erosion, hold shifting sand, or exert any other beneficial influence.
Resource	Any commodity that meets a need.
Resource Management	The wise use of a particular resource, eg., forest, to achieve a specific end.
Sustained Yield	The principle by which a resource (forest, wildlife, fisheries) is managed to produce a specific yield on a continuous annual basis.
Tourism	Is the combination of activities done by visitors and the system of businesses and services that serve visitors.
Tourist	Is anyone who has travelled to your community from some other location and does not plan to stay.
Working Group	An aggregate of forest stands including potential forest areas characterized by the same predominant species and managed under the same rotation and broad silvicultural system.

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